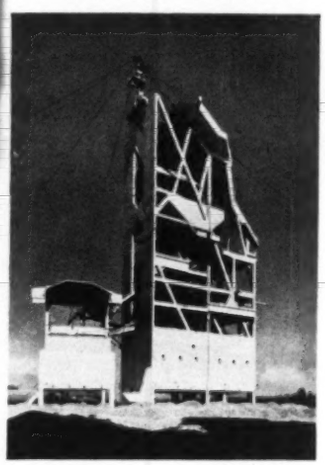
MARGINALIA

Concrete not à la Mode

At a time when post-tensioned vaultwork in concrete seems so fashionable as to be downright compulsive, it is refreshing to see a structure which uses regular (not tensioned) reinforced concrete according to the classical repertoire of plates, stanchions and beams—and does so with complete justification, 1.

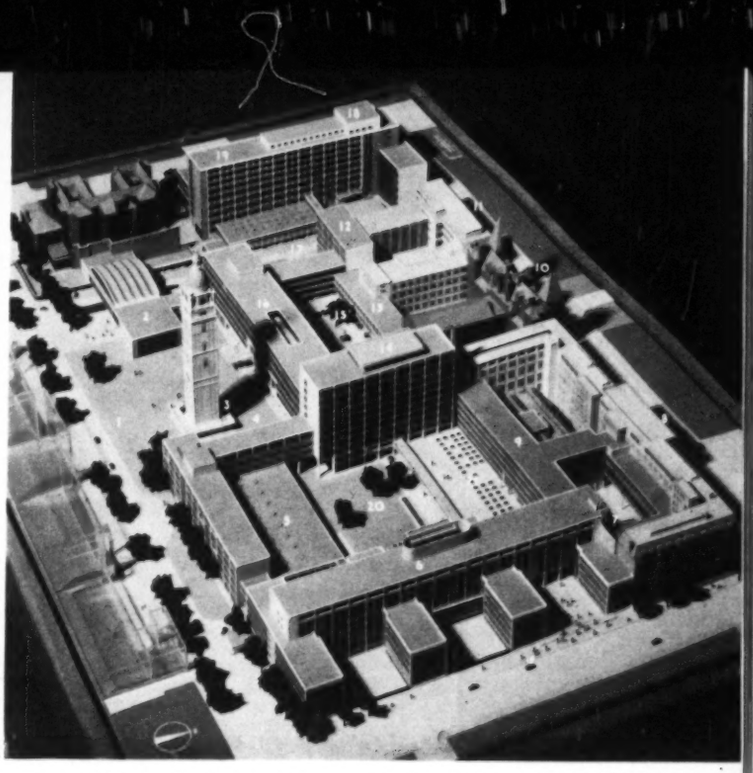


L'Architettura

The gravel-plant on the river Stura, near Turin, works on a principle that is unfamiliar to English eyes, dragline buckets being winched directly from the point of excavation to the top of the washing and grading tower, through which the aggregate is fed by gravity. Giuseppe Raineri's design for this central tower handles concrete as a rectilinear material, but not according to the rectangular routines of the dying Perret tradition, and the three major hoppers (discharge, large, and small storage) are treated as integral parts of the structure. The small building in the foreground is a storage bin, and there is also a separate winch-house, standing some way back from the central tower, in order to give the winchman a good view of his operations.

Imperial College Revised

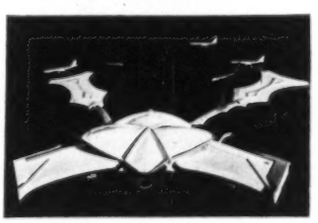
Norman and Dawbarn's reworked scheme for the redevelopment of the Imperial Institute of Science and Technology, South Kensington, 2, shows more respect for existing buildings on the site—Colcutt's tower is clearly visible, and a house by Norman Shaw in the top left-hand corner—and exhibits a more truly collegiate plan than the earlier scheme. Although the plan now retains two of the buildings centred on the *Lost Axis* to which the ARCHITECTURAL REVIEW drew attention in July, 1955, no attempt has been made to emphasize or utilize that axis, and the underpass from the Lawn, at the foot of the tower, through to the Middle Court, for instance, runs parallel to the axis but not on it. In general, the whole site has been developed in a free, asymmetrical, almost picturesque manner, with the new buildings threaded through and around such structures as are to be preserved. It is hoped to close off Imperial Institute Road, at the left of the illustration, in the manner which the REVIEW also suggested, in order to make the whole College precinct a pedestrian area of linked courts and underpasses, with vehicle circulation at a lower level—a division of traffic that seems to promise a workable solution to the problem of collegiate planning in a motorized community, since extensive car-parking is also planned at this lower level. It is to be hoped that the intention to make the square around the base of the tower into a lawn will be reconsidered—the area is not large enough to make a convincing campus, and a hard-surfaced treatment seems more practical for an area that should see a good deal of pedestrian traffic.



1, the precinct. 2, halls. 3, Colcutt Tower. 4, the lawn. 5, civil engineering. 6, mechanical engineering. 7, north-east court. 8, Royal School of Mines (existing). 9, RSM extension. 10, Royal College of Music (existing). 11, aeronautical and chemical engineering (existing). 12, ACE extension. 13, Royal College of Music extension. 14, electrical engineering. 15, middle court. 16, college block. 17, west court. 18, physics. 19, maths. and other depts. 20, engineering court. 21, electrical workshops.

The Vaults of Idlewild

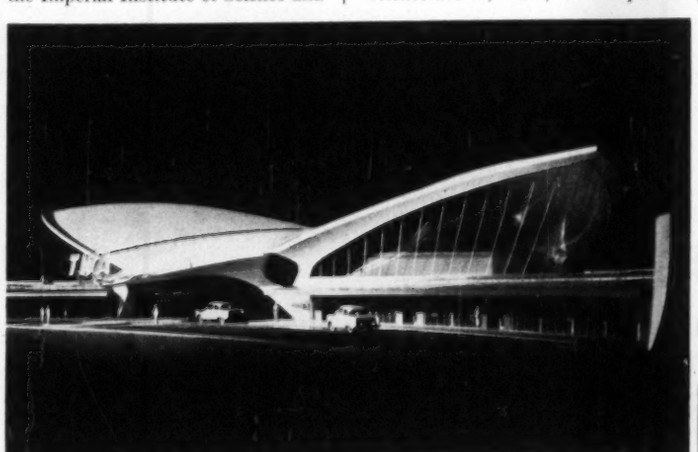
The seemingly complete defection of Eero Saarinen from the Miesian aesthetic of GM Technical Centre appears to be confirmed by the new terminal buildings he has designed for TWA at Idlewild, the international airport for New York, 4. The main concourse is to be housed under a wide, low, four-lobed vault, supported on four vee-legs, the whole very complex as a surface, though each lobe is a fairly simple three-dimensional form with a central ridge and dished edges. The interior of the concourse will doubtless be dubbed 'science-fiction,' and, if completed according to the original project, 5, will certainly be one of the most original interiors outside the field of exhibition architecture—though its acoustics might prove alarming if it were open at any point to the apron where jet-powered airliners are manœuvering. However, there should be no need for this to happen, as the planning of the whole complex has taken the idea of embarkation-fingers to a point somewhat beyond its anticipated logical conclusion. Thus, while baggage-handling and similar

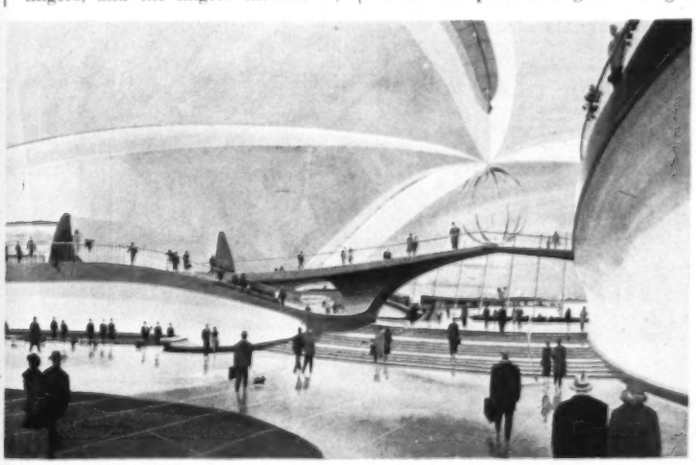


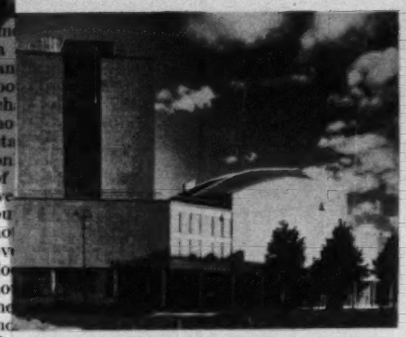
services will be dealt with in the two low blocks flanking the concourse, the marshalling of passengers for individual flights will take place in what are, effectively, satellite terminals, seen in 3, at the ends of the fingers, and the fingers themselves, while achieving their anticipated condition of being equipped with moving footways, will no longer deliver passengers direct to the door of the aircraft, but merely to the satellites.

Zodiac

The latest addition to the rapidly growing body of Italian architectural magazines, *Zodiac*, is un-Italian—in intention at least—for this bulky, six-monthly, Olivetti-sponsored publication is 'supernational' in its editorial attitude and its editorial committee, which is all Italian, is backed by a further, international committee, containing names like Entenza, Maxwell Fry, Hatje and so forth. The first issue, which has just appeared, seems a little too top-heavy with distinguished contributors—Gropius, Argan, Giedion, Rogers, Drexler, Bourgeois, Pasmore and Adriano Olivetti himself—for any editorial policy to appear as yet, and Olivetti's own policy-statement seems more concerned with ethical and social problems than with either the formal or the technical questions which we are accustomed to regard as 'Architectural.' This, obviously, could be a position of great strength







6, 7 8 *Arkkitehti*

from which to make a vital contribution to the architectural thought of our time, but there is little sign of it in this first number, in which too many people are content to rehearse well-worn, or even worn-out, themes. Adriano Olivetti's own architectural tastes, his political sensibilities and sense of social morality, his international orientations, are all so well-known that one had hoped for a more striking and decisive editorial policy. Is it too late to implore him to retire both his editorial committees, and run the magazine in his own way?

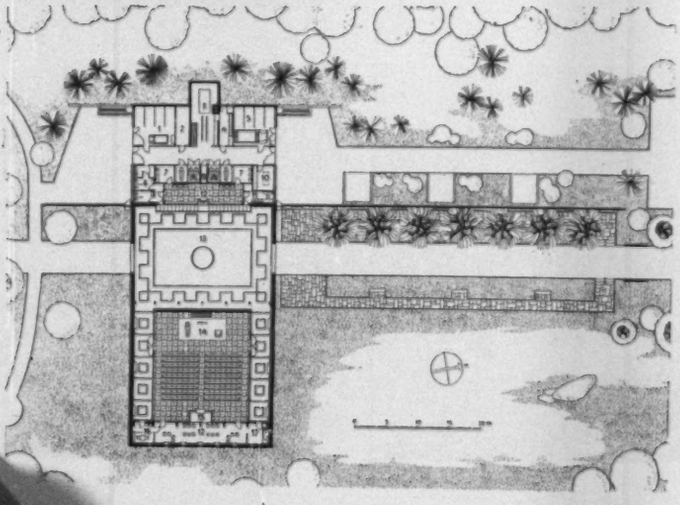
Sculptured Auditorium

The combined hotel and concert-hall-cum-cinema at Lahti, Finland, recently completed to the designs of Kaija and Heikki Siren, is not only a good example of the polished version of the Finnish style which these two architects practice, 6, but is also notable for the treatment of the auditorium itself. The walls and ceiling are without any decoration or colouring, but the mechanics of the hall have been put to work to give sculptural relief. The needs of acoustics and lighting have been exploited to give an elaborate prismatic effect to the ceiling, 8, and the apertures from the projection booth at the back of the hall have been grouped and treated so as to form an abstract-functional panel of sculpture, 7, on the rear wall of the circle.

9 *Schweizerische Bauzeitung*

Swiss Crematorium

Unlike the Rothschild Mausoleum (*Marginalia*, December, 1957) the new crematorium of the Liebenfels cemetery, Baden, designed by the Zurich architects Lanners and Wahlen, gains its effects of proper monumental dignity by the gradual revelation of a symmetrical plan. This would hardly be suspected from the approach road, 9, for the view beyond the entrance 'arch' reveals only a long wall on the right, and an asymmetrically pitched roof, over the chapel, to the left. However, when the approach road enters the crematorium proper, it proves to be on the line of the secondary axis of an almost academically axial plan, 10, but even so the main axis is still partly disguised since the entrances to the chapel are on either side of it, not axially disposed opposite the entrance to ths relatives' waiting-room on the other side of the central court.



Gaudi Symposium

On January 20 the Junior Council of the Museum of Modern Art in New York held a symposium on Antoni Gaudì, an exhibition of whose work is at present being held there. The speakers were Salvador Dali, Henry-Russell Hitchcock, Jose Luis Sert and James Johnson Sweeney. The following description of the proceedings is contributed by Jaqueline Tyrwhitt. . . .

'The Gaudì meeting was lively but —like all such meetings—not profound. Hitchcock showed some colour slides and talked of colour and surface treatments. Sert recounted some anecdotes, but his chief point was that Gaudì was courageously interested in structural forms. This he considered to be Gaudì's main contribution: the rest was influenced by the bad taste of the era plus Art Nouveau. Sweeney gave a long and eloquent display that he had recently been reading Ruskin: then embarked in a seemingly irrelevant comparison of Brancusi and Bernini. He said mighty little on Gaudì, but his flow of language and choice of words was marvellous. We also had a tape recording from Salvador Dali (in hospital). This was almost incomprehensible but it emerged that he considered he himself was the only man capable of carrying the Cathedral of the Sagrada Familia to completion. A few darts were thrown at Picasso, Corbusier and Christian Zervos.

'From the audience Philip Johnson asked Sert how he was expected to *use* Gaudì today: we were no longer in an age of craftsmanship and a straight line had to be straight. Sert replied there was room for all sorts. He thought Gaudì's courage in tackling new forms was a plus and did not imply any minus. The city scape was large enough to include many forms and in some place curves —even bulges—might be permissible and perhaps desirable. A foreign accent asked what Gaudì had that Frank Lloyd Wright hadn't got. Someone said that Wright had called Gaudì 'that mud-pie artist' to which Hitchcock commented Gaudì might have retorted 'that jig-saw artist.' Sweeney said both were products of Art Nouveau and Hitchcock said they weren't. At about this point Douglas Haskell rose and said whether one liked Gaudì or not it was worth while to study him because this was the way everything was tending. Both Wright and Corbusier 'in their old age' were turning to curved, if not anthropomorphic forms. The world was tired of 'one, one, one, one,' like a turkey gobbling up peas 'module, module, module, module,' and we were entering upon the decorative phase of modern architecture. Arthur Drexler—who had organized the show for the Museum of Modern Art—appeared to wash his hands of the whole thing and implied that Gaudì, like Disneyland, appealed because of the association of ideas: he depicted a pre-Freudian escape world. Hitchcock went along with this to some extent, saying Gaudì's work gave rise to feelings of disquiet and 'what was that word so popular a few years back—Angst!' Sert tried to drag the discussion back to Gaudì's interest in structural experiments with warped forms saying that while he himself held no brief for Gaudì's period decoration, he felt it was unjust to overemphasize this side of his work, and that certainly Corbusier's recent work could not fairly be called decorative: it was a searching for new forms. A few more comments were made and then the meeting—which was crowded to capacity—broke up.'

Architect of the Technicolor Workshop

C. Wycliffe Noble decided to study architecture in Basle, and worked in Schönenwerd where he came under the influence of the modern movement. On return to England he joined M.o.W. where he worked on an atomic research establishment. He was Staff Architect to the Festival of Britain, and commenced private practice under the name of Gooday & Noble, in 1951; in 1955 the firm of C. Wycliffe Noble & Partners was established.

Architect of the House at West Wittering

Michael Lyell after qualifying at the Architectural Association in 1949, undertook post-graduate studies in Canada and the United States. He worked as assistant to Sergei Kadleigh until 1953, followed by private practice and partnership with Wells Coates. Currently engaged on office and industrial buildings, shops, motels, miscellaneous houses and flats.

Imperial College

The Clerk to the Governors of the Imperial College of Science and Technology has drawn the REVIEW's attention to the fact that the College is a school of the University of London, and that the illustrations of its new department of mechanical engineering in the January Preview issue should therefore have been placed with the university buildings instead of with the technical colleges.

Gatwick

When the designs for Gatwick Airport were illustrated in the AR January Preview issue, it should have been stated that the consulting engineers for the project are Frederick Snow and Partners. They are also the overall co-ordinating consultants for the Ministry of Transport and Civil Aviation. The architects are Yorke, Rosenberg and Mardall.

ACKNOWLEDGMENTS

MARGINALIA, pages 157–158: 1, L'Architettura; 2, S. W. Newbery; 3–5, 6, 7, 8, Arkkitehti Trans-World Airlines Inc.; 9, Schweizerische Bauzeitung. FRONTISPIECE, page 160, Peter Weaver. COUNT RUMFORD pages 161–163: 1, 4, by permission of Der Gartendirektor Bayer. Verwaltung der staat Schlösser, Garden und Seen; 2, 3, by permission of the Municipal Director, Landeshanpstadt, Munich. ROTHES COLLIERY, pages 165–169: 1–9, Galwey, Arphot. TECHNICOLOR WORKSHOP, pages 170–173: 1–6, 9, Toomey, Arphot; 7, Galwey, Arphot; 8, Colin Westwood. MILFORD HAVEN, pages 182–188: 1–21, Nairn, Arphot. HOUSE AT WEST WITTERING, pages 189–191: 1–6, Norman Gold. PLATE GLASS SHOP FRONT, pages 192–195: 1, Reece Winstone; 2, National Buildings Record; 5, 10–13, Toomey, Arphot; 6, 7, 9, Galwey, Arphot. CURRENT ARCHITECTURE, pages 196–200: 1, 2, Carlfred Halbach Ratingen; 3, G. L. Blake; 4, 5, S. W. Newbury; 6–8, John Pantlin. MISCELLANY, pages 201–210: Criticism, 6, 7, Lucien Hervé; Exhibitions, 3, Studio Yves Herrochon; Townscape, 3, Reece Winstone; Furnishing, 1–3, Ideal Home; 4, 5, Toomey, Arphot; Counter Attack, 1, 2, Nairn, Arphot; 3, Sport and Country. SKILL, pages 211–226: Interiors, 1–6, Toomey, Arphot; 7–13 Galwey, Arphot. Design Review, 1, 2, Browne, Arphot. Street Lighting, 1, 2, 7, 8, 10–24, COID; 3, Daily Telegraph; 4, M. Hartland Thomas; 5, Winkler; 6, Torpen Christian; 20, Toomey, Arphot.

THE ARCHITECTURAL REVIEW

Volume 123 Number 734 March 1958

The Cover shows part of the remarkable programme of exterior relief sculptures on the Church of Achthamar, Turkey, built for the ancient Christian kings of Armenia, and depicting, appropriately enough for a small kingdom flanked by giant Empires, David and Goliath. The church is described and illustrated in an article beginning on p. 174.

157 **Marginalia**

160 **Frontispiece**

161 **Count Rumford** *by W. J. Sparrow* A Loyalist who changed sides in the American War of Independence, came to England, travelled on to Bavaria and died in Paris a Count of the Holy Roman Empire, Benjamin Thompson, later Count Rumford, was in many ways a characteristic amateur-cum-adventurer of the Romantic era. But he was unusual in his architectural and scientific interests, his philanthropy and his practical abilities as a social reformer. In any of these fields he would deserve a full-scale study, but Mr. Sparrow has limited himself to two main subjects—Rumford's *Englischer Garten*, complete with chinoisery pagodas, in Munich, and his contributions to increasing the technical efficiency of domestic equipment, particularly in the generation, distribution and conservation of heat, for he was a pioneer of double glazing, as well as central heating by steam.

164 **Rothes Colliery, Fifeshire:** *Architect, Egon Riss*

170 **Workshop for Technicolor:** *Wycliffe Noble and Partners*

174 **Achthamar** *by Richard Burton, John Donat and Paul Koralek* The island church of Achthamar on lake Van, in Turkey, is among the most striking monuments to survive from the extinct Christian Kingdom of Armenia. Although the general form of many Armenian churches is known, the decorations of few of them survive, and while Achthamar boasts a few fragmentary frescoes within, its exterior is still adorned with a remarkable series of figurative scenes and decorative bands in flat-faced relief. Not only are these carvings notable for the original and satisfactory way in which they combine with the large simple forms of the architecture, but also for their style and vision, which exhibit an extremely Armenian blending of East and West.

182 **Milford Haven** *by Ian Nairn* The industrialization of Milford Haven is probably as justifiable as it is inevitable, but it raises serious planning questions, not only because it infringes the sanctity of a National Park, but because the possibility exists for bold and comprehensive design that could preserve much of the characteristic landscape of the area, and yet find adequate space for industrial installations and extra housing. Mr. Nairn's study of the Haven and its problems not only makes specific suggestions for dealing with individual problems, such as refinery chimneys, but outlines general principles for exploiting what may be one of the finest townscape opportunities of the century, and makes a plea for a really bold and imaginative approach on the part of centralized authority.

189 **House at West Wittering:** *Architects, Wells Coates and Michael Lyell*

193 **The Plate Glass Shop Front** *by Mary Eldridge* Among the most striking innovations in early nineteenth-century streetscapes was the arrival of shop-fronts with really large window-glasses, made possible by improvements in plate glass techniques, and by the removal of the glass tax in 1845. This increased availability of an exciting new material corresponded with a period of increasing commercial pressures, and the design of shop-fronts underwent radical transformations, which are described and illustrated in Miss Eldridge's article, together with the efforts of architectural theorists and critics to keep pace with developments.

196 **Current Architecture**

Miscellany

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208 **Counter Attack**

209 **Books**

Skill

211 **Interiors: Booking Halls, Bond Street, W.1:** *Architect, Michael Egan*

213 **Grosvenor House, Park Lane, W.1:** *Interior Designers, R. D. Russell and Partners*

215 **Design Review**

216 **Techniques: Street Lighting** *by Peter Whitworth* In recent month's, lamp-standards have become objects of the most violent townscape controversies and certain types, particularly those in reinforced concrete, have been subject to widespread execration. In this study of the design of standards, Mr. Whitworth fills in the background of illumination techniques and structural methods that go so far in determining their ultimate form and discusses the characteristics of the main types now on the market.

222 **The Industry**

222 **Contractors**

Authors: *W. J. Sparrow* after taking a first class degree in physics was a schoolmaster for twelve years. He then went to Loughborough College as a senior lecturer in physics working under Dr. Herbert Schofield and had as colleague and co-firewatcher Mr. Bernard Hollowood. In 1945 he became interested in the training of schoolmasters and was invited to become deputy head of the Loughborough department for the training of teachers. Later he moved to the University of Birmingham where he is now a senior lecturer. He has long been interested in the history of science and has made a special study of the life and work of Count Rumford. He is the author of a text book on *Heat* and numerous articles on educational topics. He was first brought into contact with architecture through the study of church buildings. *Richard Burton, John Donat* and *Paul Koralek* are all aged 24. They studied at the AA 1951-56 and on completion of the course travelled overland by land rover to Turkey and Persia accompanied by two courageous wives, to study Persian architecture and decoration aided by the AA and ICI travel scholarships. Previously they had read about Achthamar and made a long detour through the Turkish mountains to visit the island. Richard and John are with the LCC and Paul is with Powel and Moya. *Peter Whitworth* studied at the Southern College of Art 1942-45 and was subsequently junior assistant to the ecclesiastical surveyor to the Dean and Chapter of Winchester 1945-46 and chief assistant to Collins and Calrow 1946-56. He is now at the CoID as secretary to the street furniture panel. In addition he has built his own house with his own hands.

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THE ARCHITECTURAL REVIEW

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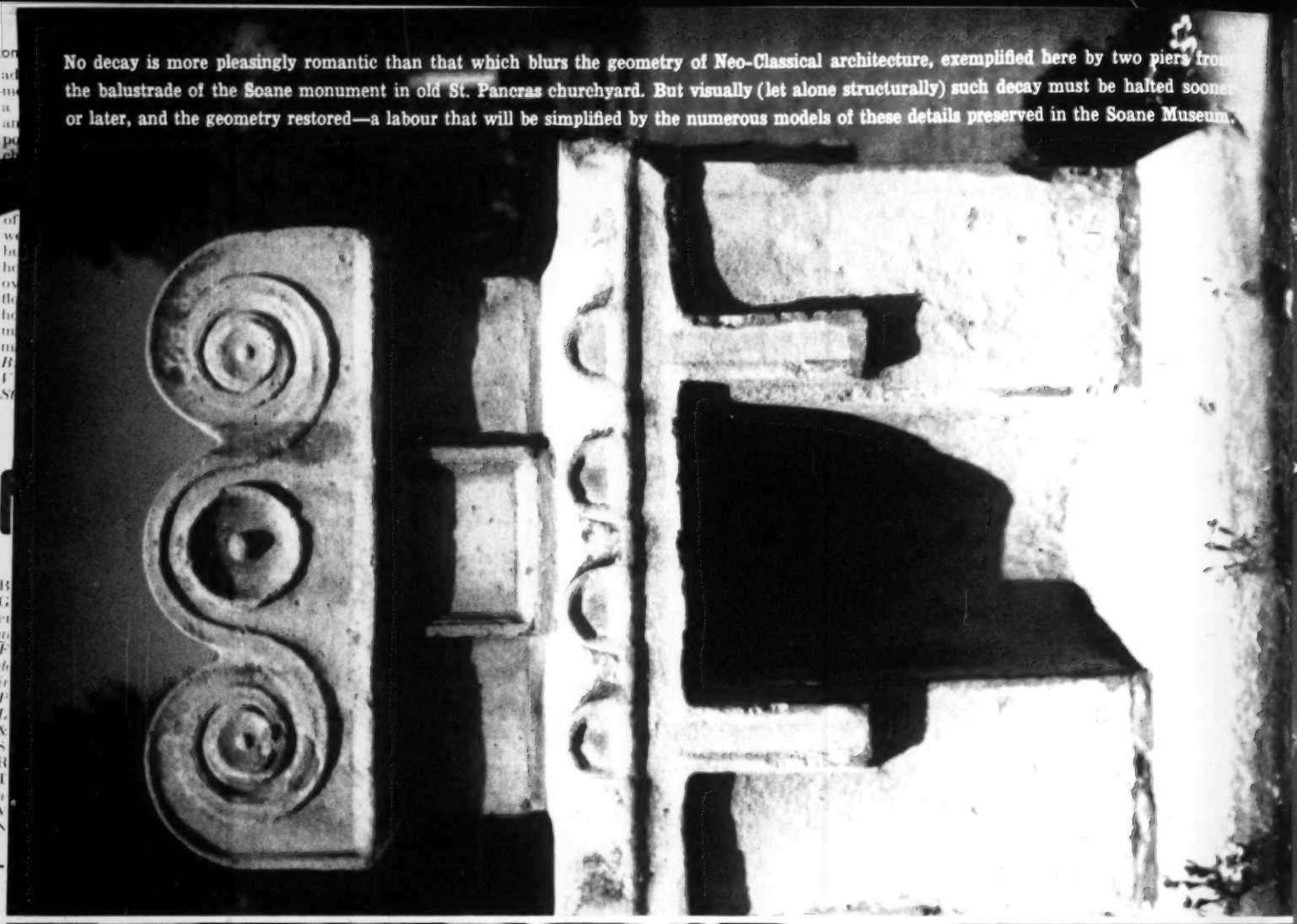
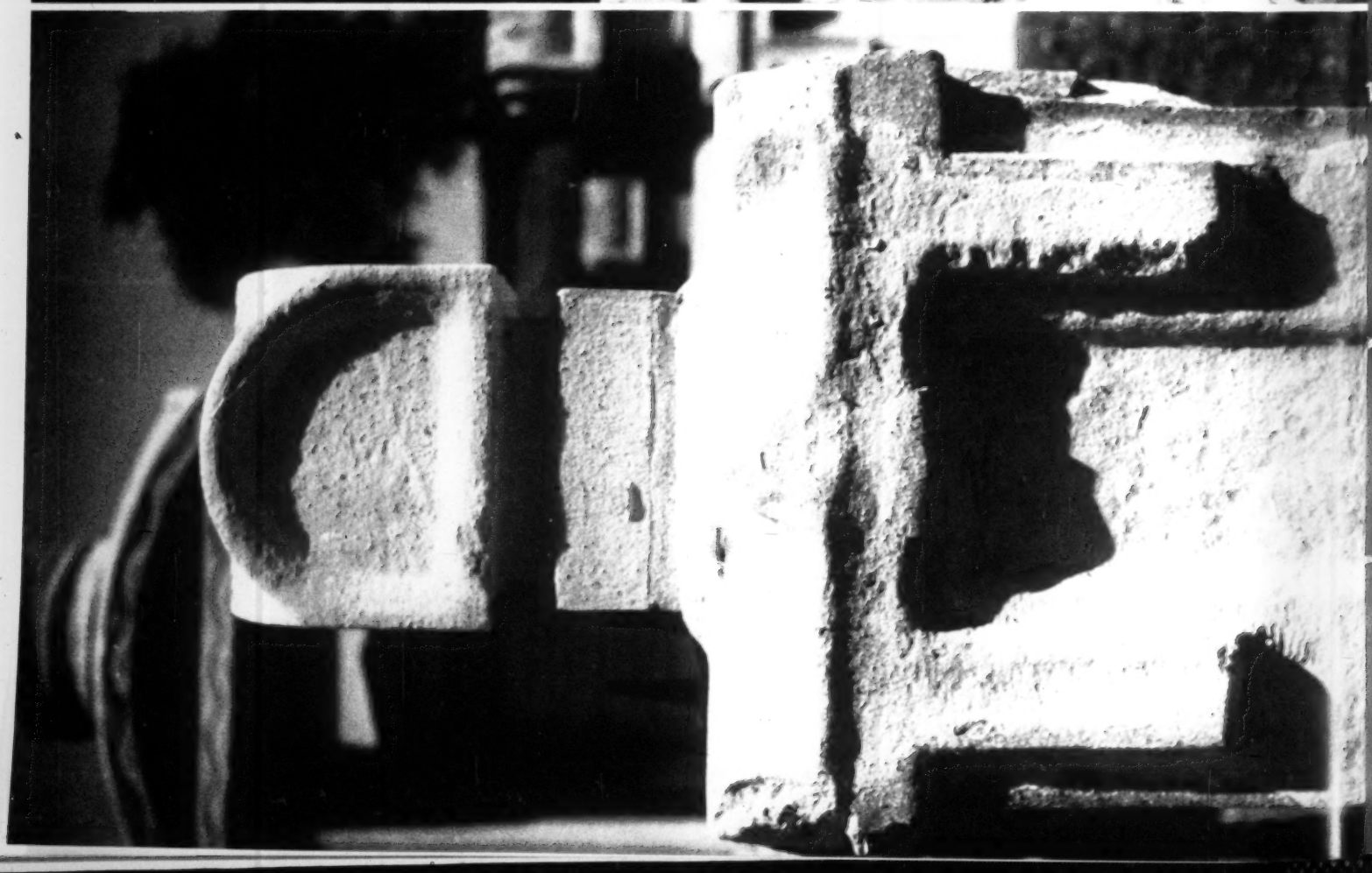
FIVE SHILLINGS

No decay is more pleasingly romantic than that which blurs the geometry of Neo-Classical architecture, exemplified here by two piers from the balustrade of the Soane monument in old St. Pancras churchyard. But visually (let alone structurally) such decay must be halted sooner or later, and the geometry restored—a labour that will be simplified by the numerous models of these details preserved in the Soane Museum.





W. J. Sparrow

COUNT RUMFORD

Count Rumford, a man of international fame and a prince of opportunists, died at the age of sixty-one near Paris in 1814. He had by then left his mark on the Europe of his time and, to a less extent, on his native America. Though we are here mainly concerned with his not inconsiderable architectural ideas, he was as well or better known in the fields of science, philanthropy, war and diplomacy. He has, in fact, most often been remembered as a man of science, but his scientific ideas and discoveries nearly always arose from practical problems. In our technological age we should remember him as its herald and the first man consistently to apply scientific ideas to daily living.

As a boy, Benjamin Thompson was clearly cut out for a life different from that of an American farmer. He was quick-witted and courteous, inquisitive and skilled with his hands; a lad of parts in whom the local worthies took interest. He was shop assistant, medical student and school teacher in turn. Then at nineteen he married the daughter of the local minister and, as she was the widow of the squire and well-to-do, this circumstance put him on the road to provincial success. Always capable of living up to his position in dress and bearing, Thompson so impressed the Governor of New Hampshire that he was offered a commission in the Second Provincial Regiment of the county. This started him on a military career; but he was soon in trouble. It is now clear, as was then suspected, that he was a royalist in sympathy and, to boot, a spy for the British when open war broke out in 1775. After two trials and a period of indecision he found himself in October firmly established in the British camp in Boston. Here he was useful to the local commanders and, when the Americans drove out the British, Thompson brought the official dispatches to England. He left his wife and daughter in America, but this deprivation of family contacts seems not to have troubled him at all.

In England he soon became the favourite of Lord George Germain (the Secretary of State responsible for American Affairs) and, if contemporary gossip is reliable, of Lady George and her daughters as well. He was, however, no rake, but an ambitious, able and calculating young man. He became a fellow of the Royal Society, Under Secretary in the American Department and a member of the rich and influential group which had control of affairs. His income was soon reputed to be £7,000 a year and, though this is probably too high a figure, this handsome young adventurer was earning and spending on a scale he could hardly have thought likely when he served in a Boston dry goods store.

After a period of active soldiering in America, fighting of course for the British at the end of that sad and humiliating struggle, he found himself a colonel on half-pay without firm or attractive prospects. Germain had retired in disgrace, England was sheltering many loyalists like himself and he still wanted a military career. Taking horses, equipment and maps he started on a continental tour and before long became Colonel and Aide-de-Camp to Charles Theodore, Elector of Bavaria. This cultured, obstinate, pleasure-loving ruler was also Elector Palatine and chiefly interested not in Bavaria but in his territories on the Rhine. Thompson had therefore almost a free hand and what was literally the chance of his lifetime. He took it. Within a few years he had reformed the army and eliminated from it long-standing abuses; he made the soldier's life respectable and established schools for their children. He increased rates of pay, established military gardens and provided soldiers with paid occupation in peace time.

After the army, beggary. Munich and its surroundings swarmed with beggars. With planned precision Thompson had them arrested and provided them with work and food. To the majority of the citizens of Munich this was miraculous and they gave willingly for the maintenance of the sick and the infirm part of the money they had previously felt obliged to throw to importunate and pestering mendicants. In quite a modern style Thompson arranged for collection boxes to be put in churches and other public places—the better-off usually paid by banker's order; and he sent decorated vehicles round the town to collect food. Though he felt no pity for beggars (pity was an emotion he despised) he claimed benevolence as his motive and he wished to reform the morals of those he rescued from penury and vice. 'Let us,' he said, reversing the usual order, 'first make them happy and then virtuous.'

There seemed no limit to Thompson's ideas or to his ability to put them into practice, but by this time he was meeting strong opposition from the Munich City Council and from other sources. His health failed and he looked round for an honourable position which would take him from the centre of conflict. He found one and was appointed to be Bavarian Ambassador in London. To his intense chagrin the King of England would not accept his credentials as he was a British subject and a former member of the British Government. However, he stayed on in London though he was never *persona grata* at court.

He had gained much in Bavaria: honours (he was a Count of the Holy Roman Empire), an international reputation as a reformer, friendship with many European figures, and a growing recognition of his scientific ability.

Of his later achievements, his greatest was the foundation in this country of the Royal Institution. Of his personal affairs it may be said that they were as colourful as his professional achievements, though less successful. After he left America in 1776 he never saw his first wife; he found consolation, however, in Bavaria in the company of the Countess Nogarola and her sister, the Countess Baumgarten, who bore him a child. Later he married that strong-willed, cultivated, grand lady, the widow of Lavoisier. She was, indeed, the stronger character and his abilities and distinctions she could match with her own. This was sad for the incurably self-centred Rumford, and, after somequarrelling, they parted and lived their own lives, both in Paris.

Turning to Rumford's architectural work one thinks first of Munich's *Englischer Garten*, 4, with its hundreds of acres of grass, its lakes, streams and its temple, 2. It was laid out in 1789. Along the bank of the River Isar he found a 'dreary waste of pebbly strand and marshy ground' and turned it into a garden in the English style. His methods were thorough. With the Elector's permission he used an army corps to clear, drain and lay out the site. The soldiers were specially clothed, had free lodgings and extra pay; their regimental duties were reduced to a minimum. Military bands provided music and there were facilities for spare time dancing and games. The *Englischer Garten*, now larger than in Rumford's time, is still one of the glories of Munich and a boon to its citizens.

Rumford was a quick learner in many fields. He was, as we have seen, when he first came to England on visiting terms with rich and influential families and was fully aware of prevalent fashions in the design of large gardens. He was also a warm admirer of Chinese life and ideas, and the pagoda, 3, he put in his gardens bears witness to his admiration. Not that it was the first of its kind. Kew already possessed an impressive example ten stories high, built in 1762. His English Garden was a magnificent achievement and particularly so for a man who at the time was busily occupied with affairs of state and the object of much opposition. Its benefits were fully recognized by the people of Munich, rich and poor alike, and during his absence from the city in 1795 an impressive memorial stone, 1, was set up in the gardens on which can be read the following inscription (the memorial was being repaired when the present writer searched for it in 1954—it has now been restored):

To him
Who eradicated the most disgraceful
public evils
Idleness and Mendicity
Who to the Poor gave Succour,
Occupation, good Habits
and to the Youth of the Fatherland
So many cultural Institutions
Go Stroller and strive to match him
In Spirit and Action
And us
In Gratitude

What Rumford did to deserve so eulogistic an inscription has been briefly outlined. It was characteristic of him that in laying out the English Garden he had in mind utility as well as pleasure, and in order to encourage agriculture he caused to be built at intervals in the gardens cottages and farmhouses. One of the farms he made into a show place, and many who had little interest in the breeding of cattle nevertheless went 'to see them as beautiful and extraordinary animals.' The cowsheds 'were concealed in a thick wood behind a public coffee-house in the middle of the garden.' Concealment of the utilitarian was one of the ideas he picked up from polite society and, of course, was a mark of eighteenth century architectural and domestic design.

A house gives scope for the application of scientific ideas. Rumford's own was no exception. When he returned to England in 1798 he bought number 45, Brompton Row. This he made into a place of renown. A friend and admirer of Rumford's, M. A. Pictet, of Geneva, gave this description

> . . . 'I have been staying in the Elysium belonging to Count Rumford, living there the pleasantest life imaginable. Now is the time to try to describe this pleasing and ingenious structure.
>
> 'The house has five stories including the domestic quarters which in this country are always in the basement. The layout is the same in all stories: two rooms and a staircase. On the ground floor is the parlour, where morning visitors are received, and the dining room. On the first floor a bedroom and a reception room; on the second floor the same arrangement; on the third a bedroom and a workroom for the master of the house. In this room, which looks over the countryside, light enters by windows set side by side to form an arc of a circle and through which a person standing in the middle of the room can see a quarter of the horizon. The window sill is decorated with flowers and shrubs and as one looks over the trees, across the meadows, and seeing nothing in the foreground, one has the illusion of being in the country close by a garden bordered by a park.'

Pictet describes the outbuildings which included a stable, coach house, laboratory and rooms for coachman and carpenter. These outbuildings were joined to the house by a centrally-heated covered passage. The rooms in the house had windows with double glazing, tables which fitted into the wall when not in use and there were built-in wardrobes and cupboards. He goes on:

> 'The bedrooms are similarly disguised; that is to say the bed looks like an elegant sofa the seat of which is formed by one of the mattresses, the other mattress is so made that it folds in two like a hinge along the back. . . . The ends are adorned with two cushions. Under the sofa are two large, deep drawers to hold the sheets, the blankets and the night attire. These drawers are concealed behind a fringed valance.'

Rumford had a passion for order; that and the desire for fame were his strongest motives. It is certain that his intense dislike of waste lay behind his inventiveness. Waste of fuel, inadequate heating and ventilation he attacked with vigour. He was as well known for his efforts to ensure an economical use of fuel as for his attempts to feed the poor economically, and of course, the two sometimes went together. Both gave rise to good-natured amusement, 6. Samuel Galton writing to Matthew Boulton spoke of Count Rumford's 'metaphysical soups in which he seems to have mistaken Element for Aliment.' The French made numerous jokes about him; one witty person said

1, *the recently restored Rumford Memorial in the English Garden at Munich.*

2, *the Monopteros in the English Garden.*

3, *Rumford's pagoda, destroyed in the last war but quickly restored.*

that he was so clever that he would soon be cooking his dinner with the smoke from his neighbour's chimney! But behind all the wit stood the acknowledged expert. The needs of the times in many countries turned men's attention to his essays and from them to the man himself. The satirist John Wolcot (as Peter Pindar) wrote extensively of his work and ways; Coleridge sang his praise in a sonnet; the expert writer on social conditions, Sir Frederic Eden, quoted extensively from his Essays; and in 'Memorials of his Time,' Lord Cockburn, speaking of the famine of 1795 and 1796, wrote:

> 'On the 4th of March, 1795, about eleven thousand persons, being probably about an eighth of the population, were fed by charity in Edinburgh . . . This was the triumph, and the first introduction of public kitchens, Count Rumfords, and cooking committees. Chemistry strained itself to extract nutriment from everything.'

His 'roasters,' fireplaces (quite commonly known as Rumfords) and kitchens were, like his ideas, internationally famous. He himself said that at one time he had not less than 500 smoky chimneys 'under his hands.' He altered chimneys for the well-known men of his time: in this country for Lord Palmerston, Sir John Sinclair, Sir Joseph Banks, the Marquis of Salisbury, and others. His principles were sound for they were based on an understanding of the production and transmission of heat. Contrary to what was then contemporary practice he brought the fire forward, diminished the size of the fireplace, set the cheeks at 135° with the back, reduced the amount of iron and increased the firebrick. He showed that the main fault of most chimneys was the great size of the throat which, he said, should never be more than five inches wide, near to and perpendicularly over the fire, 5. Writing in 1796 he was fully aware of the disadvantages of the ordinary domestic grate and its contribution to London fogs. 'Nothing,' he says, 'surely was ever more dirty, inelegant and disgusting than a common coal fire.' He was 'even sanguine enough to expect' that the time would come when the open fire would disappear 'even in our dwelling rooms and most elegant apartments,' though he was 'still child enough to be pleased with the brilliant appearance of burning fuel.' He could not 'help thinking that something else might be invented equally attractive' to fix his attention and amuse his sight, something 'less expensive and less connected with dirt, ashes and other unwholesome and disagreeable objects.'

In the late eighteenth century the kitchen fireplace in the larger dwelling houses usually consisted of a long coal-burning grate placed in the space under a wide and deep open chimney. There was commonly an oven at one end and sometimes a boiler at the other. It was an inefficient arrangement designed, so it seemed to Rumford, in every part and detail 'for the express purpose of devouring fuel.' It was, however, the smoke jack which most infuriated him. 'No human invention that ever came to my knowledge appears to me to be so absurd as this.' Its inefficiency as a machine appalled him.

> 'Would to God,' he cries, 'that I could contrive to fix the public attention on this subject. . . . Nothing surely is so disgraceful to society and individuals as unmeaning wastefulness.'

But it was in large scale feeding that Rumford found the greatest scope for his knowledge, philanthropic emotion and organizing ability. He personally supervised the building of kitchens in Munich, Verona, and London; in other places they were built to his designs.

He had been led to conclude that seven-eighths of the heat generated from fuel burnt in an ordinary fireplace is carried up into the atmosphere and totally lost. In his early experiments in Munich he had one fireplace to heat eight copper boilers in two rows set in brickwork. Flues with dampers distributed the heat and the fire was regulated by a register. With this arrangement the daily cost of the fuel was one twentieth of a farthing per person with over a thousand being fed. The social needs of the time ensured attention to his work and although he was angry that his improvements were not more widely accepted, it seems in retrospect that he made a great impact on those concerned with the welfare of the poor. It was after his death that neglect overtook him.

The Annual Register for 1798 gives an account of the kitchen fitted up at the London Foundling Hospital under his direction. Particulars are given of the roaster, steam box, and double boiler. The prices quoted are: roaster with accessories, 22 guineas; large boiler, £25; small boiler, £11; steam box £2 8s.; incidentals £10. Altogether just over £70 'for the ironwork' and about as much more for installation. Speaking of the value of the inventions, the writer concludes that the greater the scale the greater the return. The article mentions the necessity for care in opening the doors to serve the fire especially 'where the cook wears muslin' so that 'the draught which is very strong does not draw in and set fire to her clothes.'

Not only did Rumford improve grates, cooking apparatus and chimneys, he saw also the advantages of conveying heat by steam and water. His methods were applied by him for heating halls and large rooms and by industrialists to various manufacturing processes. He was in Leeds in the summer of the year 1800 and was received by the Mayor, Benjamin Gott, the great manufacturer of woollen cloth. Having had occasion to rebuild his factory, Gott had installed apparatus of Rumford's design with an estimated saving in fuel of nearly two-thirds. This pleased Rumford and he is full of praise for such men as Gott 'who abound in no other country' and to whose spirited exertions and initiative

> 'we owe one of the proudest distinctions of our national character, *that of being an enlightened and an enterprising people.*'

Rumford installed steam heating at the Royal Institution both for the great kitchen and for heating the 'Great Lecture Room.' In his report to the Managers on April 26, 1802, he said:

> 'The theatre is warmed in cold weather by steam which coming in covered and concealed tubes from the lower part of the house circulates in a large semi-circular copper tube eight inches in diameter and above sixty feet long which is concealed under the rising seats of the pit.'

This apparatus had its early troubles and was to have a sad end. When the boiler wore out, according to Mr. Webster who was Clerk of the Works in Rumford's time,

> 'the whole steam apparatus was taken away by the ironmonger then employed and something of his own was put up, which for years was an annoyance to Mr. Faraday'

who did not know that steam heating

4, *plan of Rumford's English Garden at Munich, laid out in* 1789 *along the banks of the Isaar.*

had been used until Webster told him.

It is worth remembering that Rumford did not take out patents for his improvements and inventions. He tried hard through the Royal Institution and by other means to make them available for all. He gave clear and detailed instructions for the fitting of his fireplaces. He engaged an

> 'ingenious tradesman . . . (Mr. Summers . . .) to put up a roaster in his own kitchen; to instruct a cook in the management of it; to make daily use of it; to shew it in actual use to his customers . . . ; and also to allow other cooks to be present, and assist when meat is roasted in it. . . . I likewise prevailed on him to engage an intelligent bricklayer in his service who would submit to be taught how to set roasters properly and who would follow without deviation the directions he should receive.'

The Repository he planned at the Royal Institution was to be a teaching museum for the exhibition of large working models, and of mechanical inventions and improvements, particularly those concerned with domestic comfort and industrial processes. Working models 'of that most curious and most useful machine, the steam engine' were also to be available. Each model was to have exhibited with it a detailed description with correct drawings, and subscribers were to be entitled at their own expense to have drawings made, by draughtsmen on the premises, of any model in the repository. For various reasons these plans bore little fruit. They quickly alarmed some manufacturers who, understandably, were not so altruistic as Rumford. There is, among the Boulton Papers in the Birmingham Assay Office, a long memorandum written by Matthew R. Boulton to his father, entitled *Thoughts and reflexions on Count Rumford's proposed establishment for the exhibition of models of the machinery of our manufactories at the Royal Institution in a letter to M.B.*

In it the writer says that

> 'the Count's Philosophy has got the better of his Judgment and whatever Support his Plan may receive from the male and female Nobility it will not in all Probability be much relished by the British Manufacturer. . . . To the philosophical Dilletante who employs only his time and talents in pursuit of Knowledge the Fame of his Discoveries may be a satisfactory Reward but to the Manufacturer who expends his Capital as well as his Skill and Labour with a View to Emolument, the Possession of his Improvements can alone afford a proportionate Remuneration.'

This hard-headed manufacturer goes on to ask whether the inventor will think himself suitably rewarded by votes of thanks and acknowledgment as a liberal benefactor.

> 'Can the Institution offer any premiums equal to the fortune derived by Mr. Arkwright from Cotton Spinning?'

Such ideas, he said, might be suitable for backward Bavaria but England had taken the lead of all manufacturing countries without them.[1]

Rumford's ideas in this field were ahead of his time and not very practicable and when he left England the Royal Institution changed its character. While talking of the steam engine, however, it is worth recording that he was very largely behind the introduction of Watt's engine into Germany.

Turning again to the heating of houses we get glimpses of early nineteenth century notions of elegance in Rumford's suggestions for the design of steam stoves for heating halls and passages.

> 'They are,' he writes, 'susceptible of a variety of beautiful forms. . . . A most elegant steam stove might be made in the form of a Doric temple of eight or ten columns standing on a pedestal. The fireplace might be situated in the pedestal and the columns and dome of the temple might be of brass or bronze and made hollow to admit the steam. In the centre of the temple there might be placed an ornamental decoration.'

Nothing was too trivial for Rumford's attention

> 'The use of science is to explain the operations which take place in the practice of the arts and to discover the means of improving them; and there is no process, however simple it may appear to be, that does not afford an ample field for curious and interesting investigation.'

In these words Rumford justified the attention he gave to the art of making coffee. Over a period of years he was led to the design of a coffee pot (one such was used by Hegel) which combined economy and efficiency by using about a quarter of an ounce of coffee for one full cup and retaining the fragrance in the coffee rather than letting it be lost to the surrounding air. But Rumford carried his concept of science into many fields. He improved the design of oil lamps and made at least two suggestions which early manufacturers of electric lamps might have taken note of but did not.

Of the many other branches of his work we may choose one of interest to those who design houses and draw from his essay: 'On the Salubrity of Warm Rooms.' He had probably suffered discomfort when spending his winters in London after enjoying his thoroughly heated apartments in Munich and would have sympathized with those Americans of today who, when wintering in this country, walk out to get warm. He inveighed against the draughts which are set up by large open fires, saying that

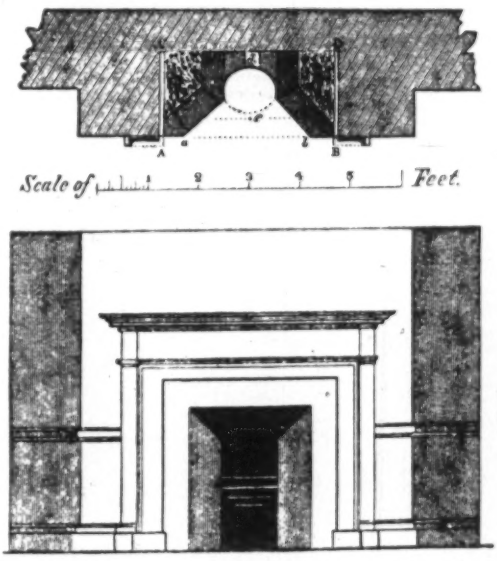
> 'such fires instead of making the room equally warm do little more than increase the violence of those streams of cold air which come whistling in through every crevice of the doors and windows.'

He very rightly pointed out the cooling effect of large windows 'which in open defiance of every principle of good taste' had lately come into fashion. He shuddered at the 'perilous situation' of delicate young ladies in muslins or gauzes when exposed to these rigours. How many young persons of delicate habits, he lamented, are carried off annually by consumptions. On the other hand the Swedes and the Russians keep their rooms very hot 'and yet no people are more strong and healthy than they are, nor are there any less liable to catarrhs and consumptions.'

This essay taken as a whole shows many of the characteristics of Rumford's writings: self-justification, a sense of mission, some overstatement arising from enthusiasm, a lack of caution in his reasoning but, at the same time, much commonsense and sound scientific ideas. His main contentions were right and the last hundred years have seen many of them put into practice in large buildings and big houses. Though he was hampered in his discussion by a lack of knowledge of the importance of relative humidity as a factor in adequate ventilation, and though the experimental and factual evidence he adduced in support of his ideas was extremely slender, his essay was a much needed attack on the prejudice, inertia and ignorance of his day. He was not

> 'without hopes that at some future period houses in England would become as celebrated for warmth and comfort as they were then for neatness and for the richness and elegance of their furniture.'

In assessing both the value of Rumford's work and his character it should be remembered that the activities and ideas described here are but a small part of what he did. His age, of course, was still the age of the expert amateur. He could turn in any direction and quickly find scope for his talents and persistence. He and his work have been so generally forgotten because no one in his time, and few people for many years after his death, saw as clearly as he did the advantages of applying science to the objects and processes of everyday living.



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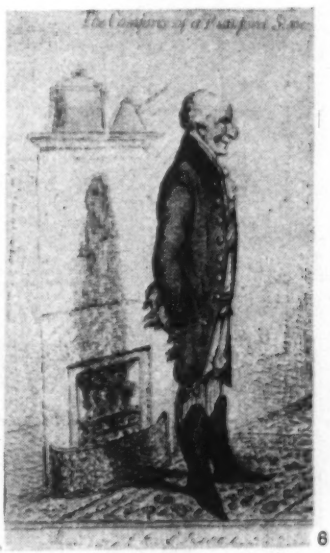
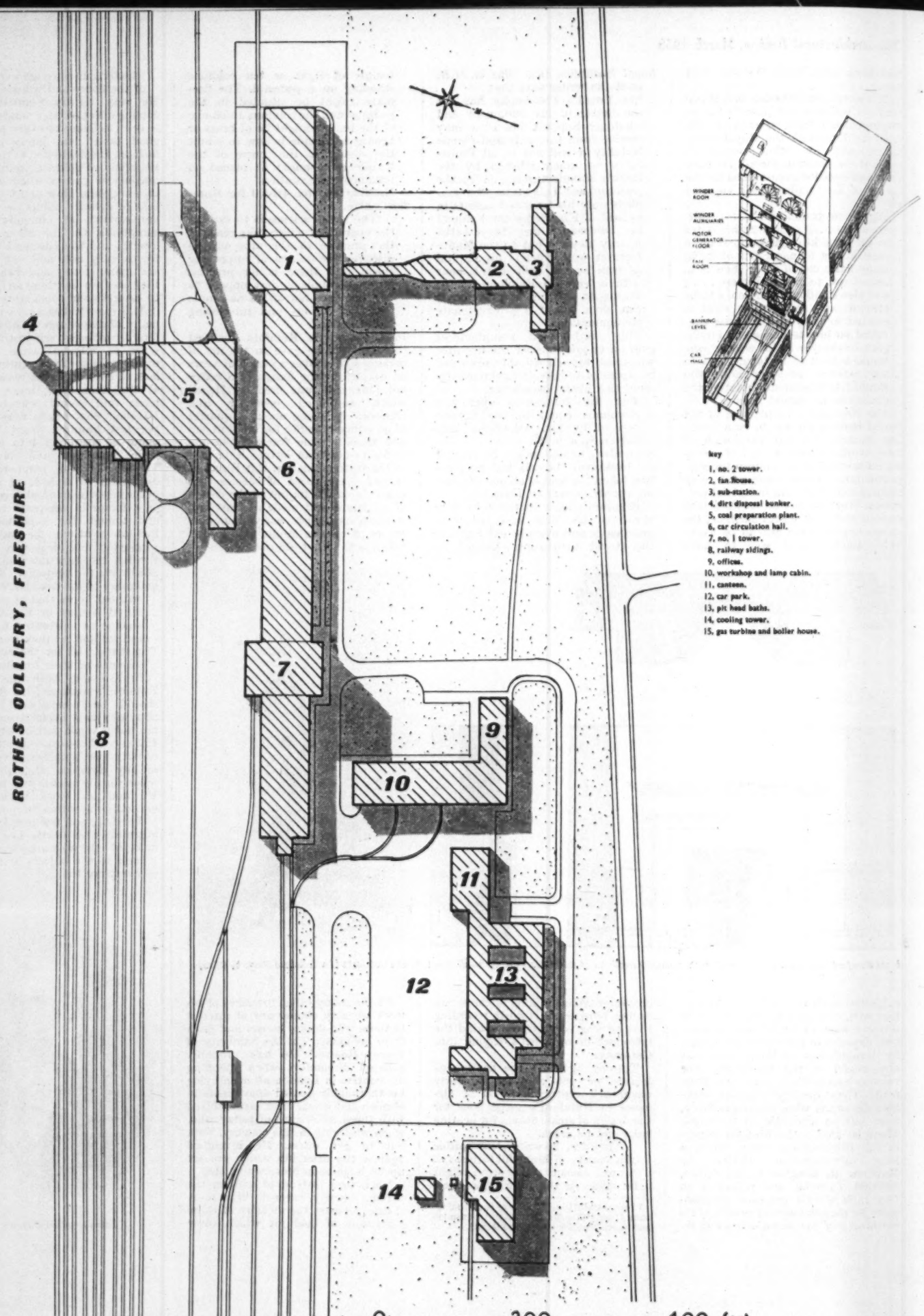


6

7

5, the Rumford fireplace and chimney. Note the relatively small size of the fireplace and the small throat, 6, The Comforts of a Rumford Stove *by Gilray.* 7, *Count Rumford at the age of* 45.

[1] I am grateful to the Master of the Birmingham Assay Office for permission to examine and quote from documents in his care.



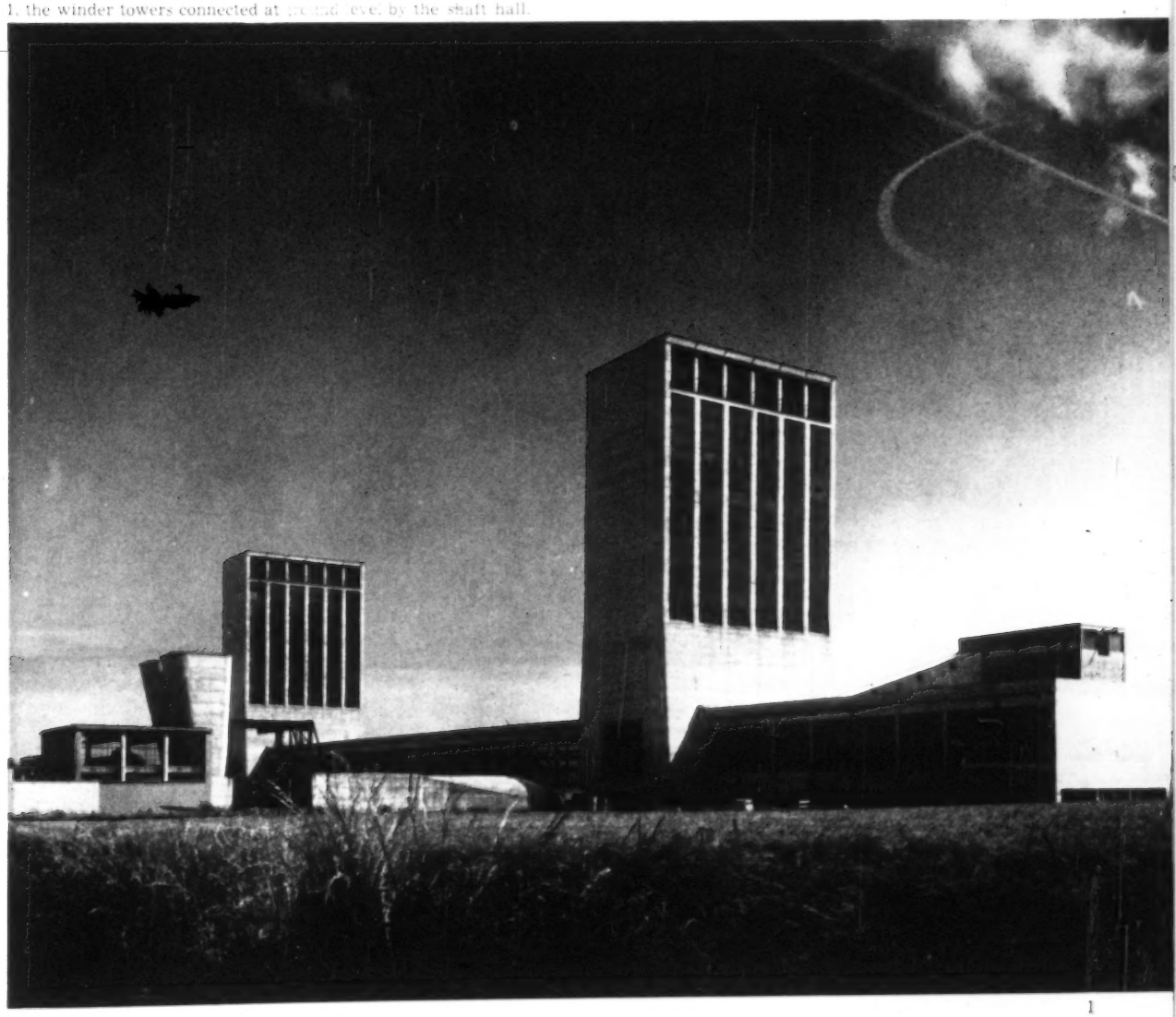
key

1, no. 2 tower.
2, fan house.
3, sub-station.
4, dirt disposal bunker.
5, coal preparation plant.
6, car circulation hall.
7, no. 1 tower.
8, railway sidings.
9, offices.
10, workshop and lamp cabin.
11, canteen.
12, car park.
13, pit head baths.
14, cooling tower.
15, gas turbine and boiler house.

ROTHES COLLIERY, FIFESHIRE

ARCHITECT EGON RISS
ASSISTANT ARCHITECT JAMES REE

1. the winder towers connected at ground level by the shaft hall.

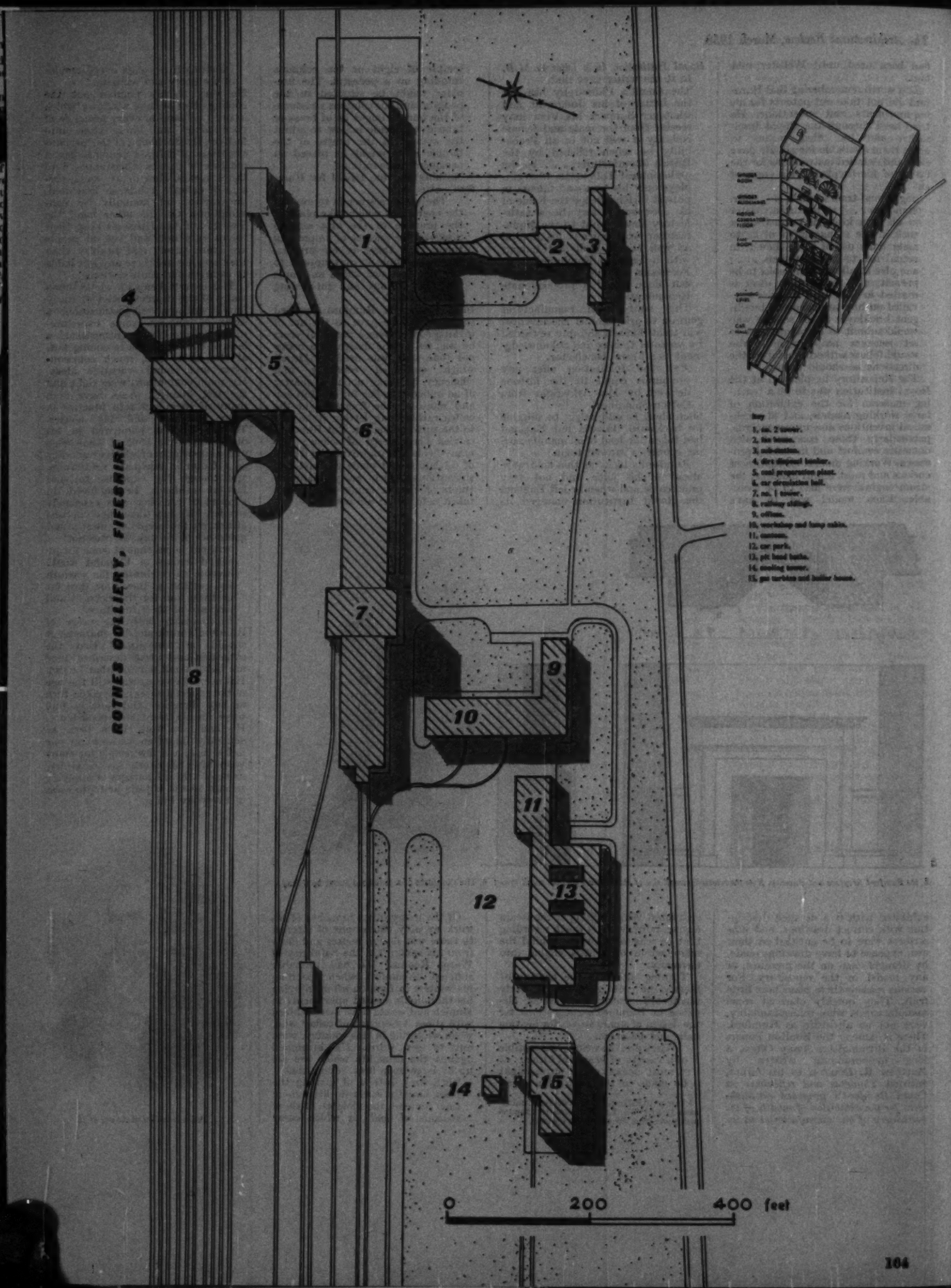


1

Rothes colliery is a new sinking in the East Fife Coalfield, near Thornton, three miles north of Kirkcaldy. The sinking began in 1947 and the colliery was completed in 1956; it will work nine seams over an area of ten square miles at an average depth varying from 2,170 feet to 2,610 feet below the surface. The architect was closely concerned with the basic planning decisions on the lay-out of the colliery; the pithead baths and canteen were designed separately and are included in only one of these photographs and in the layout plan.

The site of the colliery at Rothes is long but comparatively narrow, extending from east to west between the Strathore Road and the Thornton-Dunfermline Railway. The two winding towers and the shaft hall are situated at about the centre of the site, thus leaving the southern part for the coal preparation plant and the

(continued on page 168



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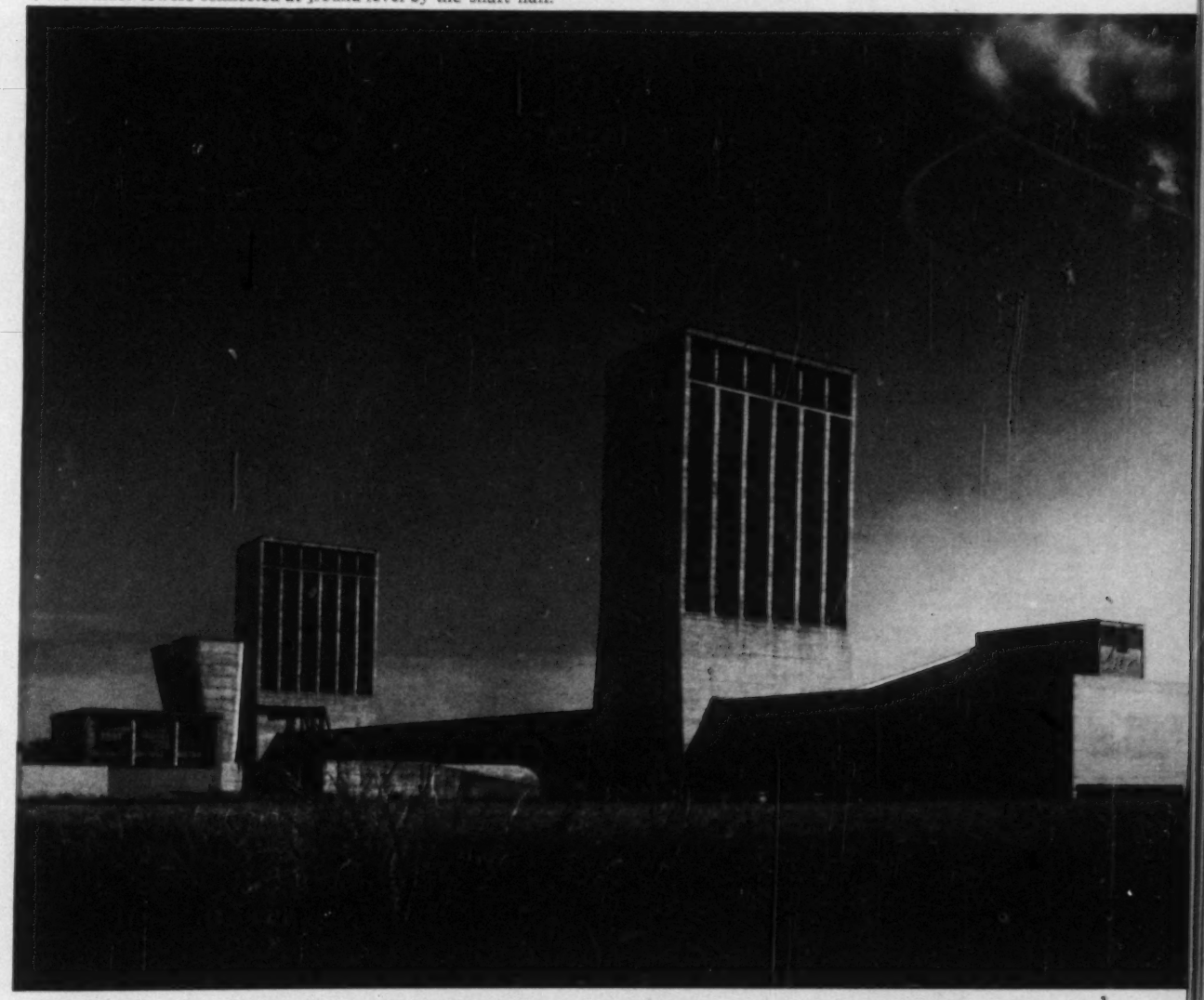

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[continued on page 168

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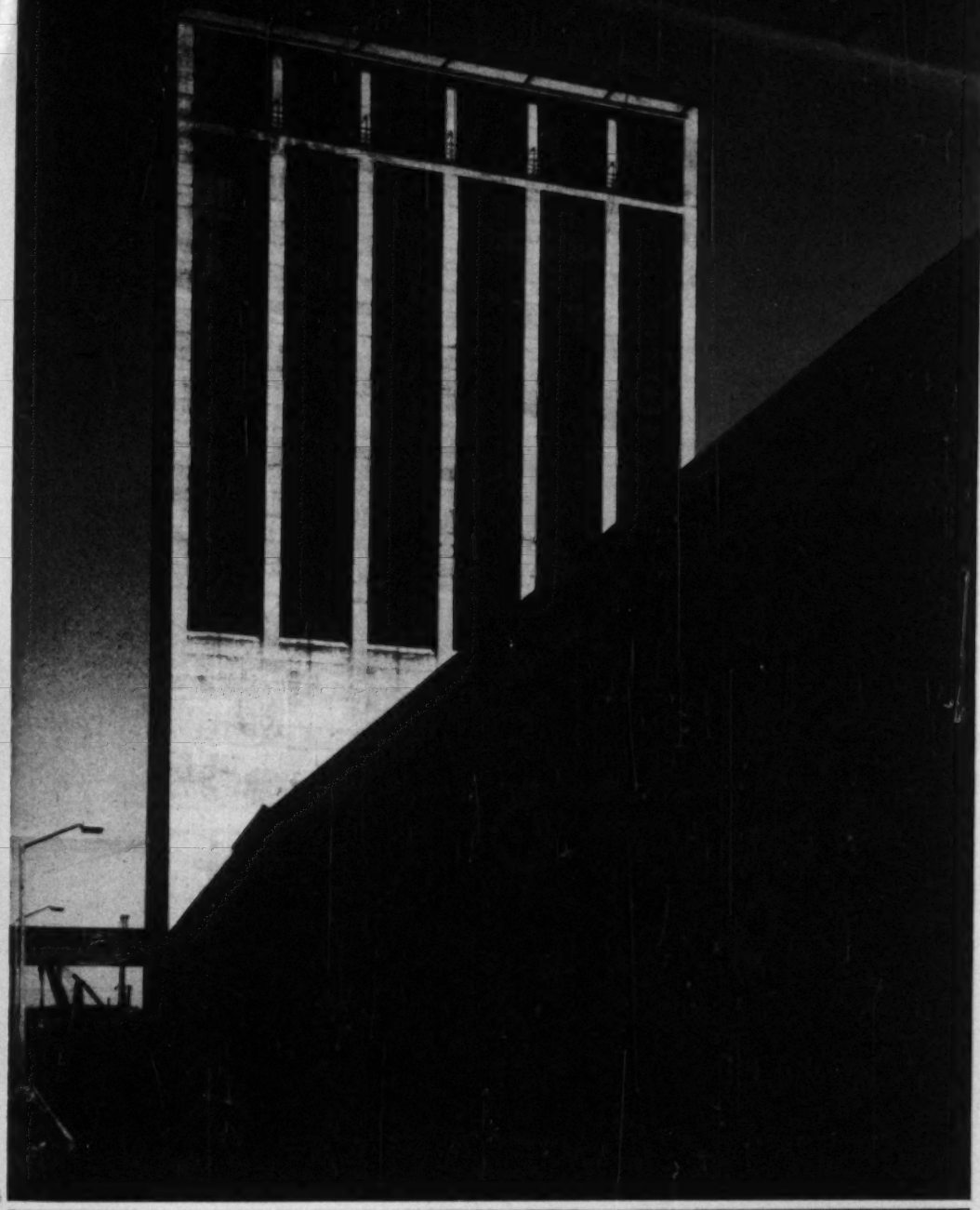
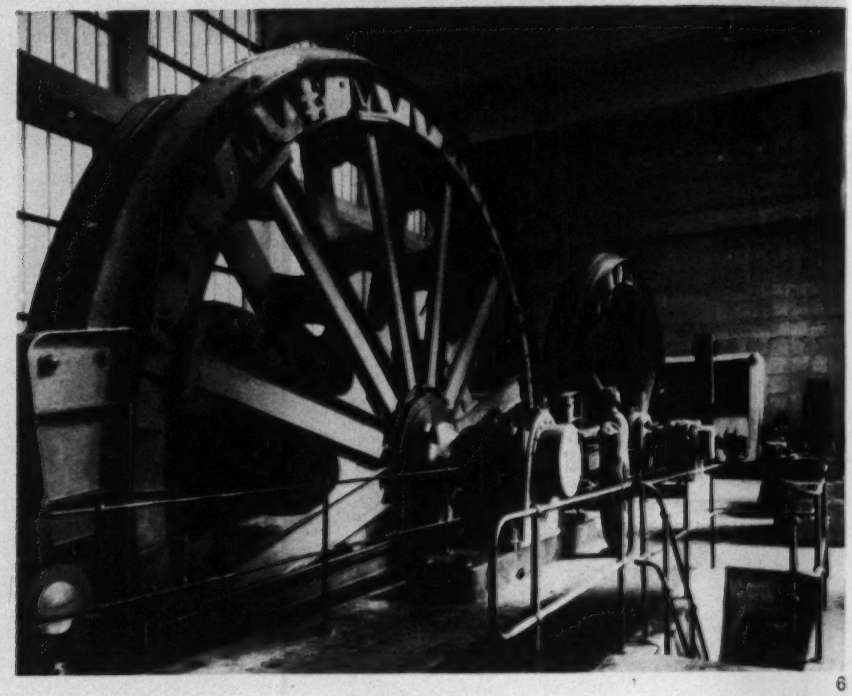


4

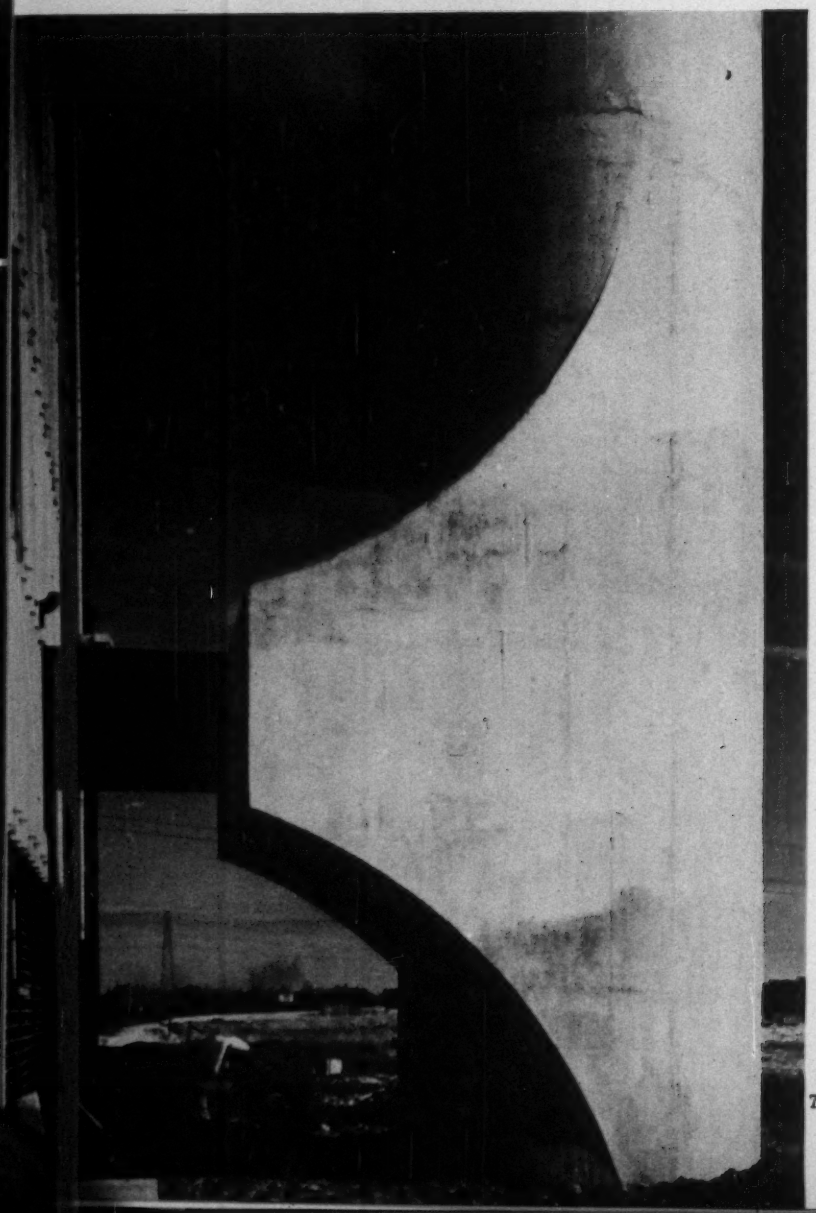
5

2, on the facing page, ventilating shafts and fan house.
3, view from the offices towards the medical centre wing of the pithead baths, which were built as a separate contract, and are not the work of Egon Riss but of D. D. Jack, head of the separate architectural office responsible for welfare buildings in the Scottish Division of the Coal Board.
4, one of 191 ft. winder towers.
5, looking towards the winder towers and the workshop block.



6

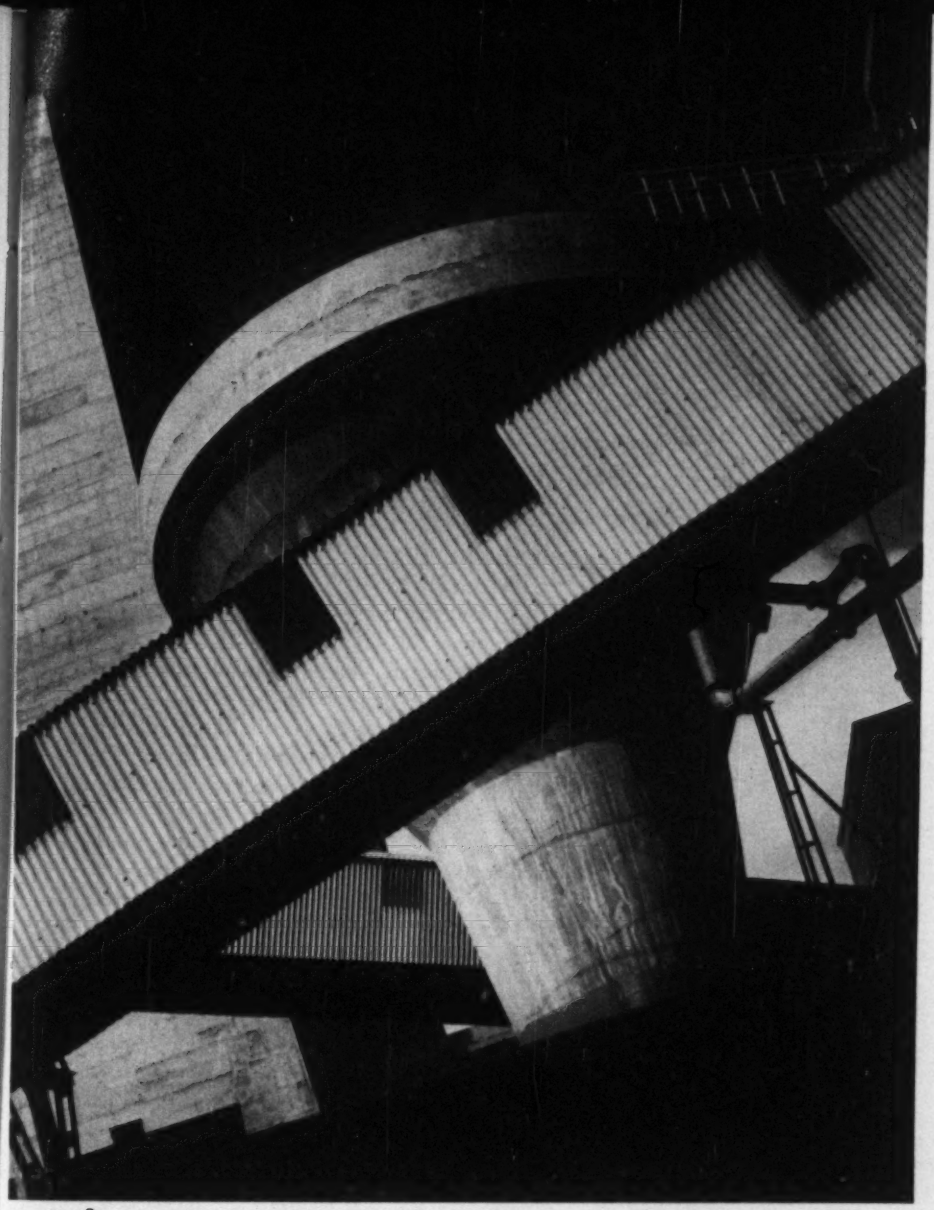
6. Koepe winders in one of the towers.
7. base of the boiler house chimney.



7

railway installations, and the northern part for the administration buildings, pithead baths, lamp cabin, stores, fan house, sub-station, etc.

The towers are approximately 200 ft. high, and house koepe tower winders and other machinery. They are spaced at 500 ft. centres and are connected by the shaft hall which houses the mine car circuit. The two blocks nearest to the road are the administration building and pithead baths, connected at first-floor level. When starting the shift the men arrive at the pithead baths, change into working clothes and proceed to the time office. Underground workers walk from there through the lamp room, over a bridge to the No. 2 Shaft, where they enter the cages to go down the mine. Along this simple route all the essential preparatory activities take place. In the past, the men had to report to various scattered buildings on the pithead to collect lamps, tools, stores and so on, from diverse sources. To reduce fatigue and make the circulation more efficient, all necessary equipment such as lamps, stores, explosives, etc., are brought to a point en route of the on-going or off-coming shifts and distributed or returned at various points. This method of circulation, therefore, can be regarded as a pedestrian scheme at a higher level, independent of all



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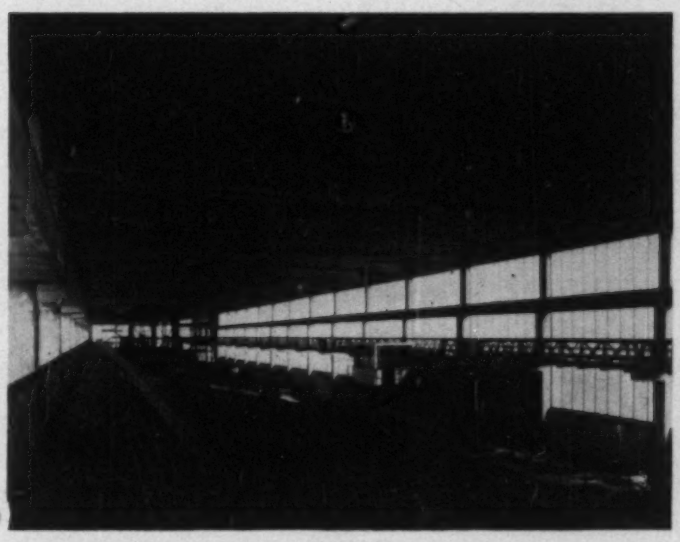
8. part of the equipment of the coal preparation plant.
9. inside the shaft hall which houses the mine car circuit.

road and rail traffic, a principle which also increases safety. The ground floors of some of the buildings contain workshops and stores, with access for mine cars and lorries. These areas are comparatively small because there are central stores and workshops in the neighbourhood where most of the repairs will be carried out.

The towers are r.c. with metal frame windows and ventilation louvres, the end wall is clad with rough-shuttered concrete. The car hall is a r.c. frame construction with infills of 11 in. cavity wall and partly r.c., while for reasons of greater flexibility the combined boiler and gas turbine houses are built in a steel framed construction clad with light asbestos sheeting, and on the ground floor 9 in. rough-cast brickwork. Patent glazing has been applied throughout and it is only in the offices that horizontally pivoted hung metal windows in timber sub-frames are used. Finishes in the administration block include linoleum on cement screed for the floors and terrazzo with ferrodo non-slip nosings for the stairs. The civil engineering consultants were the British Reinforced Concrete Engineering Co.

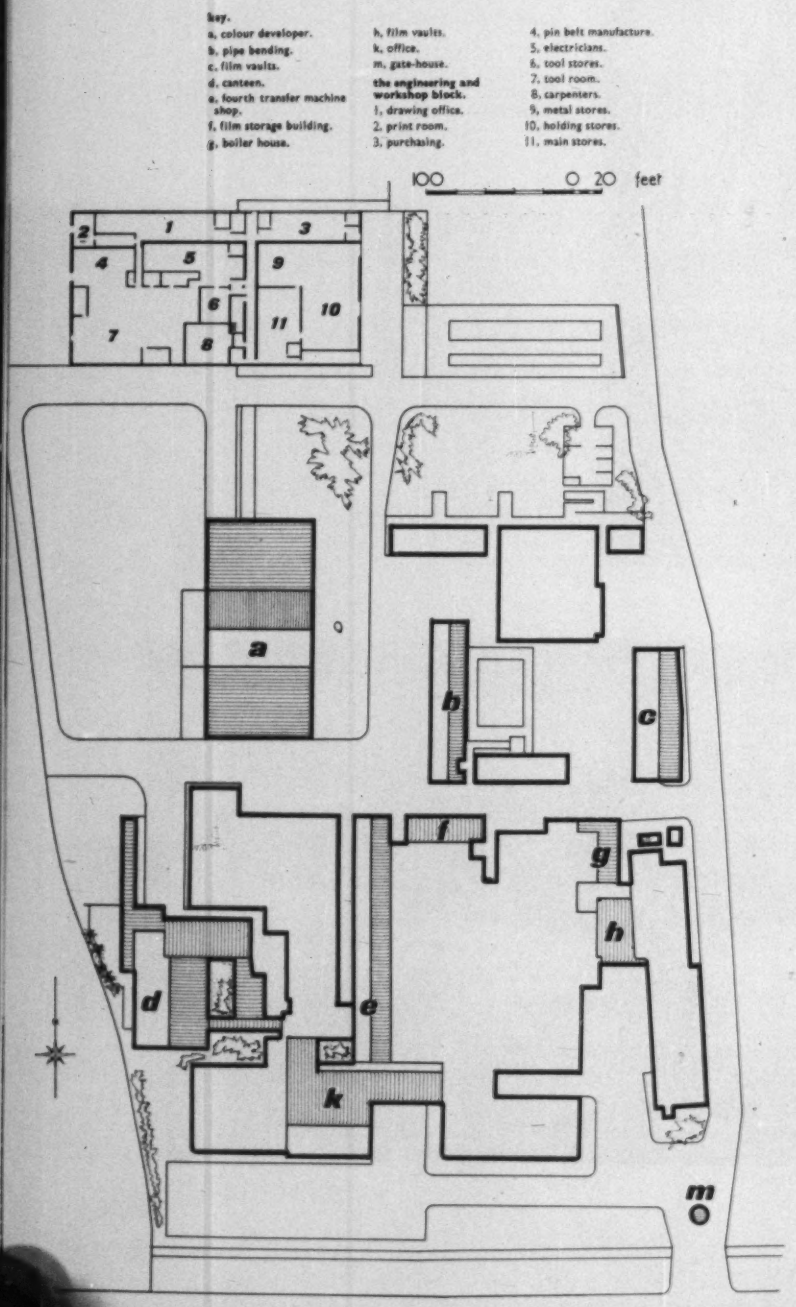


9

WORKSHOP FOR TECHNICOLOR

ARCHITECTS | **WYCLIFFE NOBLE AND PARTNERS**

Site plan showing road and building development since 1951.



These are the latest additions to a series of buildings which have been erected on the Technicolor site opposite London Airport. Fortunately this work was commissioned by a Plant Manager who had vision and influence over the employees and technicians, so that the haphazard development often found on an industrial site has been avoided.

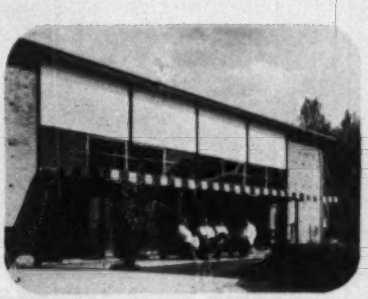
Before the very first building was designed and erected (Canteen: see AR, Nov., 1953), circulation on the site was analyzed, and the construction of roads was put in hand to cater for the maximum envisaged development between 1951 and 1961. To many industrialists this would have appeared a sheer waste of money and time, but considering that Technicolor has continued to expand with a non-stop building programme for almost seven years, this kind of research and analysis has been well worth while. The architect has not only designed the buildings, but also external light fittings and street furniture and in special cases he has advised on landscape.

The Engineering and Workshop Block has been designed on a module using a standard panel frame of mild steel angle to which could be added various cladding materials, e.g. glass (for drawing office), brickwork (engineering stores), asbestos (chemical stores). This allowed also for any of the panels to be removed should a change of function in the building be required. This point should not be underestimated, for though flexibility in planning can become an obsession in a developing industry like this one, changes in process and planning are being carried out all the time. It was therefore essential that the building should be flexible enough for the purchasing stores at some time to be turned into additional drawing or administrative offices, or be easily converted into workshops.

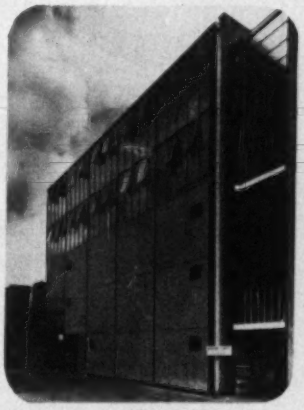
The main structural frame is of channels welded into a box form with tubular trusses at 10 ft. centres, spanning 50 ft. There are two spans across the building, making a width of 100 ft. and a length of 200 ft. The entire building is covered with an aluminium roof with fibre-board insulation to the established factory standard, and covered with grey-green mineral felt. The aluminium is left exposed on the underside and the trusses are painted red. The fascia is of Western Red Cedar, this timber being incorporated in other buildings on the site: this material was considered worth while because the fascia of the building presented a length of something like 1,800 ft. super; the Western Red Cedar fascia with its secret nailed joints weathers naturally and no further maintenance is required. According to the various functions inside the building the floor treatment varies. For the Engineering Shop wood block is used; for the Drawing Office thermoplastic tiles; and for all other parts granolithic screed.

Heating is by warm-air cabinets operated on steam batteries, the main supply being drawn off from surplus steam used in manufacture. The by-pass damper enables cool air to be drawn in from outside and blown into the factory during the summer period.

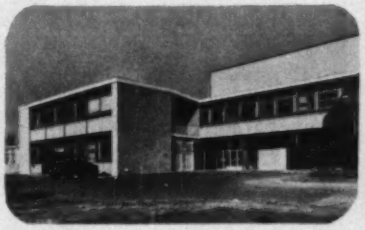
1, corner of the workshop block built of a standard panel frame of mild steel angles to which various cladding materials are added.



1952 *works canteen* **ar** *November 53*



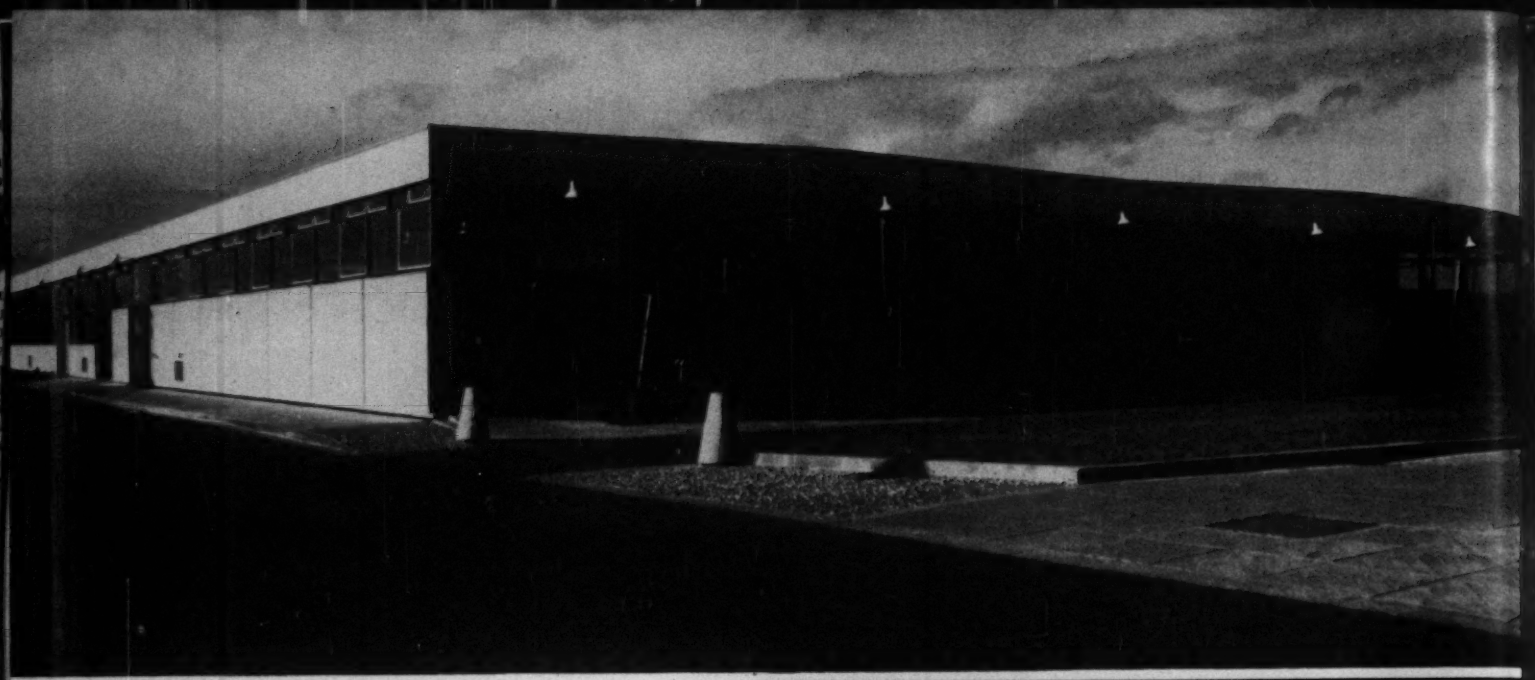
1953 *film storage* **ar** *March 58*



1955 *office extension* **ar** *February 55*

1957 *workshop* **ar** *March 58*

1



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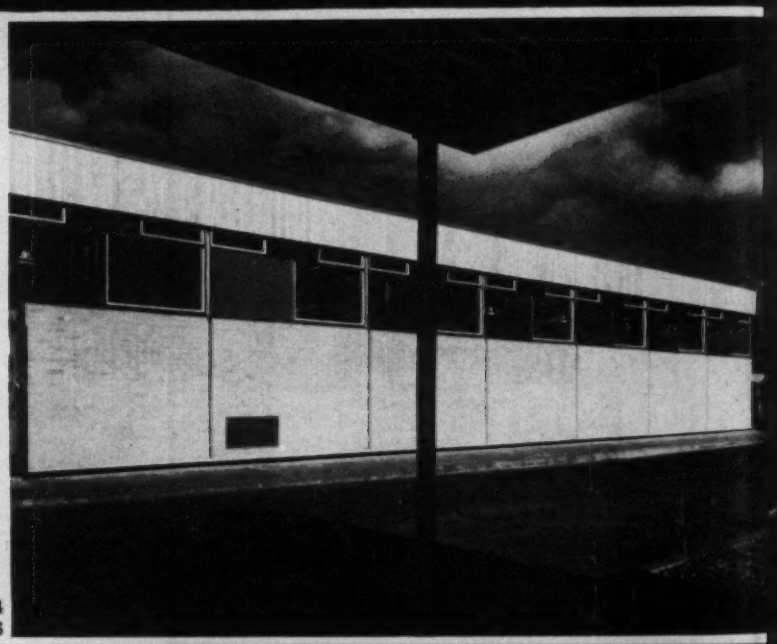
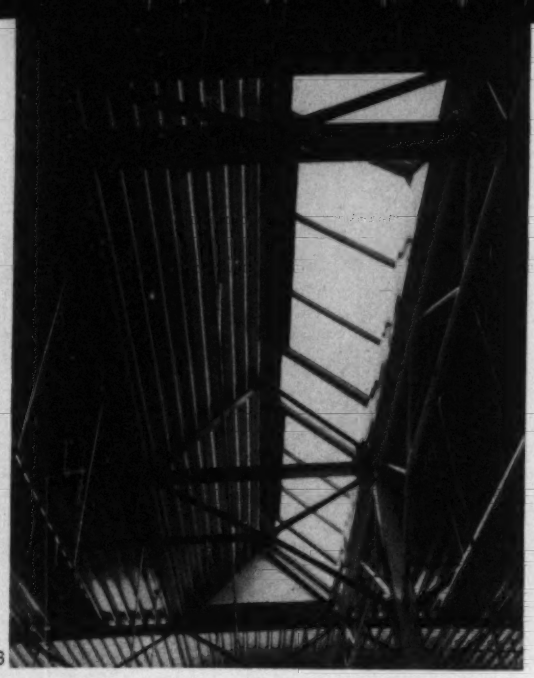


4
5

2, general view of the workshop block from the south-east.
3, view from the east with the fence screening the car park on the right.
4, south side of the workshop seen from the canopy over the entrance to the colour developer building ('a' on the plan).
5, corner bay of the workshop.

3



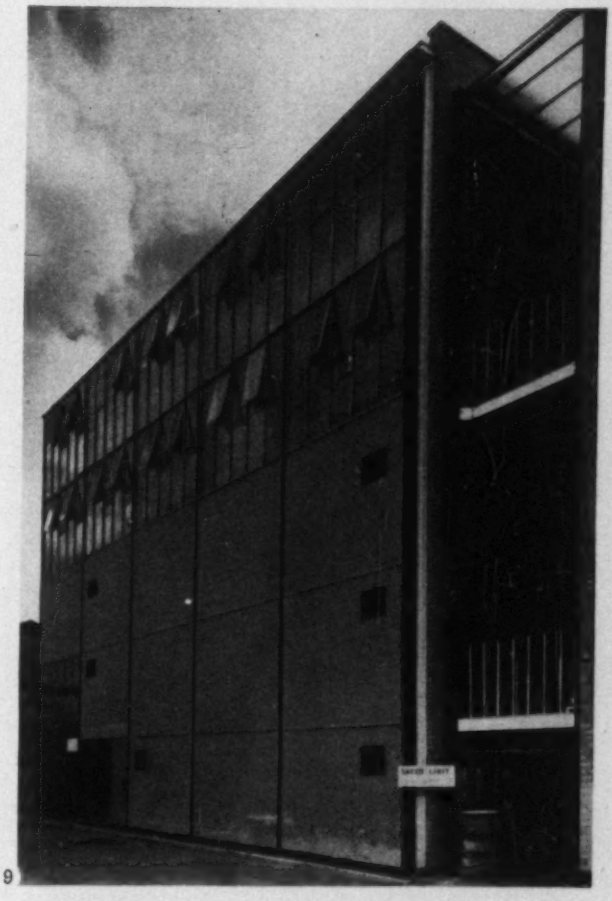
6

6, roof of the workshop block supported on tubular trusses at 10 ft. centres, spanning 50 ft. There are two spans across the building making a width of 100 ft. and a length of 200 ft.
7, the wall shown in 4 on the facing page, during construction.

7

8, low kerbside light specially designed by the architect. The lamp standards used in the car-park are illustrated on page 220.
9, the film storage building.

8



9

The Film Storage Building was unique at the time of construction, being the first building in this country to be erected over five storeys using the plastic theory as a means of calculation. The entire structure is formed of broad flanged R.S.J. members of welded steelwork, and the floor decks consist of prestressed precast concrete slabs. This building shows the kind of approach which is expected from a firm whose parent Company is American. What they required from a production point of view was that the top floor of this building should be completed first in order to transfer administrative staff from out of the existing factory, and so all preconceived ideas of programming had to be subjected to the client's requirements. It should be clearly understood that time was the essence of this contract. The complete welded frame was completed and the floor decks were put in position the top floor was then cladded with glazing and panel filling and made habitable. The building then proceeded downwards, the scaffolding was dismantled as the panels were filled in with brickwork. It should also be noted that this is a film storage building, somewhat like a giant filing cabinet, where no person operates continually, and therefore headroom could be reduced to the minimum, using as a basis the maximum handling height of a film canister. The panel filling in the lower storeys is of brickwork faced with rendering and Derbyshire white spar chippings: wherever there is rendering material this kind of treatment is used in conjunction with yellow Ibstock facing bricks and Western Red Cedar, to provide a sense of unity between the different buildings on the site.

Richard Burton, John Donat and Paul Koralek

ACHTHAMAR

Straddling the ancient routes of trade and war between East and West, the Christian kingdom of Armenia produced a series of monuments that owed much to neighbouring cultures and yet struck a note of Armenian originality. Their distinctive qualities were recognized as long ago as Josef Strzygowski's Baukunst in Armenian und Europa, *of* 1908, *but they have remained largely unappreciated—few have seen them, and they have rarely been well photographed. In this article one of the finest of these remains, the church at Achthamar on Lake Van, is not only described, but also accorded for the first time the kind of photographic treatment it deserves—as may be seen from the view across its south-western angle, opposite, with its clear-cut architectural forms enhanced by unique areas of narrative and decorative reliefs.*

It is a rugged treeless landscape that surrounds the island church of Achthamar, in the high mountains of Armenia. A hard place, relentlessly hot in summer and swept by icy winds in winter.

The island is a mile from the shore of Lake Van, and rises up a remnant peak of the mountains that break down into the lake's dead, black waters. At one end of the island ochre grey cliffs rise sheer from the lake and from their summit a rocky slope leads down to a small table of land on which the church is built. It stands amidst the ruined walls and broken tombstones of a monastic settlement, a tiny concentration of human skill and effort in the vastness of the landscape.

We felt we were intruders on the island, so strong was the feeling of the past and the atmosphere of profound quiet and solitude. Now nothing living remains except the diminutive fruit and nut trees, the pigeons and seabirds that break the silence with their cries and a vagrant white cat. The church is all that remains, and yet it seemed to us as relevant now as it was when it was first built.

Armenia straddled what was one of the main trade routes between the Orient and Europe, consequently it was the scene of innumerable wars and invasions; dominated in turn by Sassanian kings and Byzantine emperors, and conquered by Seljuks, Arabs, Greeks and Turks. It was one of the oldest Christian kingdoms in the world, Christianity becoming the state religion in 301 A.D., and in spite of its turbulent history its Christian tradition remained unbroken.

The church and a palace were built on the island during the early part of the tenth century for King Gagik of Waspurakan, a local ruler of this remote province during one of its brief periods of independence. Its form, a simple cruciform plan with a central dome surmounted by a conical stone roof, and its decorative treatment of rich carving reflect in an extraordinary way Armenia's position between the cultures of Asia and those of the Mediterranean. On the one hand, we were amazed to see, so far from Europe, something so near in spirit to the Romanesque art of France and England. On the other hand, the typically Armenian form is something quite foreign to western Europe and numerous details of the carving—Mongol faces, figures sitting cross-legged

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and others wearing eastern dress—reminded us that we were in Asia and that Christianity itself was born in the Middle East and spread eastwards as well as to the west.

Some of the carvings of strange allegorical birds and beasts at Achthamar are strongly reminiscent of the symbolism of zoroastrianism—in particular the fight of the lion and bull, which is an exact counterpart of a carving at the Achaemenid palace at Persepolis. It seems quite possible that these pre-Christian symbols were introduced by the Sassanians when they conquered Armenia in the fifth century.

Later the Seljuk invasion of the twelfth century had a powerful effect on Armenian art. The decoration of some of the tombstones at Achthamar illustrates this clearly. Their purely geometrical ornament, very different from the carvings on the church itself, is identical to that of the Islamic architecture of the Seljuk period.

The quatrefoil plan of the church yields irregular shafts and plain masses of stone, weathered to an earthen brown, which rise to four tall gables surmounted at the centre by a 16-sided drum with a conical stone roof. Inside, the space is narrow and elevated, with delicately modulated planes derived from the domes, semi-domes and arches. The white walls are covered with decaying frescoes which show scenes from the life of Christ and figures of saints and the 12 apostles.

The most striking aspect of the church is the vigorous carving which enriches the whole exterior. Figures are carved in an unusual deep relief, the whole plane of the carving being set forward from the wall with some animals and heads carved almost in the round projecting boldly from the wall, reminiscent of Gothic gargoyles. Although the compositions are governed by a clearly defined formal organization, in detail they are extremely informal, one would almost say haphazard.

Horizontal bands of decoration divide the church into distinct levels. The lowest level consists of undecorated masonry, its plain surface contrasting significantly with the plasticity of the carving of men and animals above. The two levels are separated by a decorative vine which forms a continuous frieze around the building (frontis. page 174).

The second level contains most of the carvings. There are familiar scenes, mainly from the Old Testament; Adam and Eve, 4, Jonah and the Whale, David and Goliath, (see cover), St. George and The Dragon, 5, Samson and the Philistines, 7, Abraham and Isaac, Daniel with the lions, the children in the fiery furnace and also symbolic birds and animals often grouped in pairs. Many of these scenes represent two opposing forces and seem to be linked by the idea of duality and struggle. Interspersed among them are Christ and the Madonna, saints, angels and historical figures.

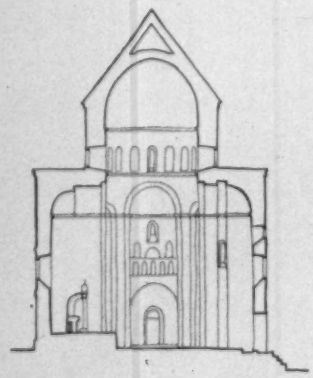
The next band of decoration is a flow of variety and activity, bound together in rhythmic arabesques. It is a forest of vines and pomegranates in which men and animals are shown hunting, feasting, fighting and harvesting, and seems to represent the whole of life on earth, 2, 3.

Above on the gable ends stand the evangelists holding the book, facing out from the church to the four corners of the earth, 13. There is no conflict here, peaceful animals and human heads decorate the eaves and the plain facits of the drum rise out of the complex relationships of mass form and decoration, and are finally resolved at the summit of the conical roof.

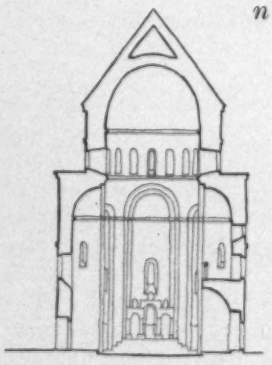
Because the church is essentially a simple and direct statement, the relationship between the carved decoration and the architecture emerges in a striking way. This decoration must be approached on two different scales—in detail the carvings, arranged in informal and often unusual compositions, are quite valid statements in themselves. On a larger scale these compositions are all subordinated—and when one examines them in detail—clearly dependent on the formal idea, or architectural organization of the building, which they help to define. It is in this relation of one scale to another that their significance as architectural decoration must lie.

We felt that the great harmony between the carved decoration and the architectural form is parallel to the relationship of its meaning to the essential idea of the building as a whole, and that as the carvings elaborate and enrich the surface of the building they also extend and deepen the meaning inherent in the formal idea.

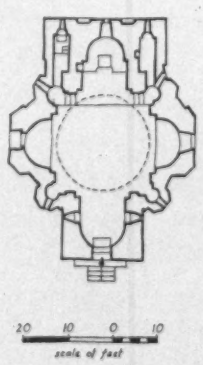
Through the decoration we are able to approach the building closer, and come nearer to the understanding of its meaning and purpose.



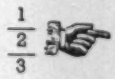
east-west section



north-south section

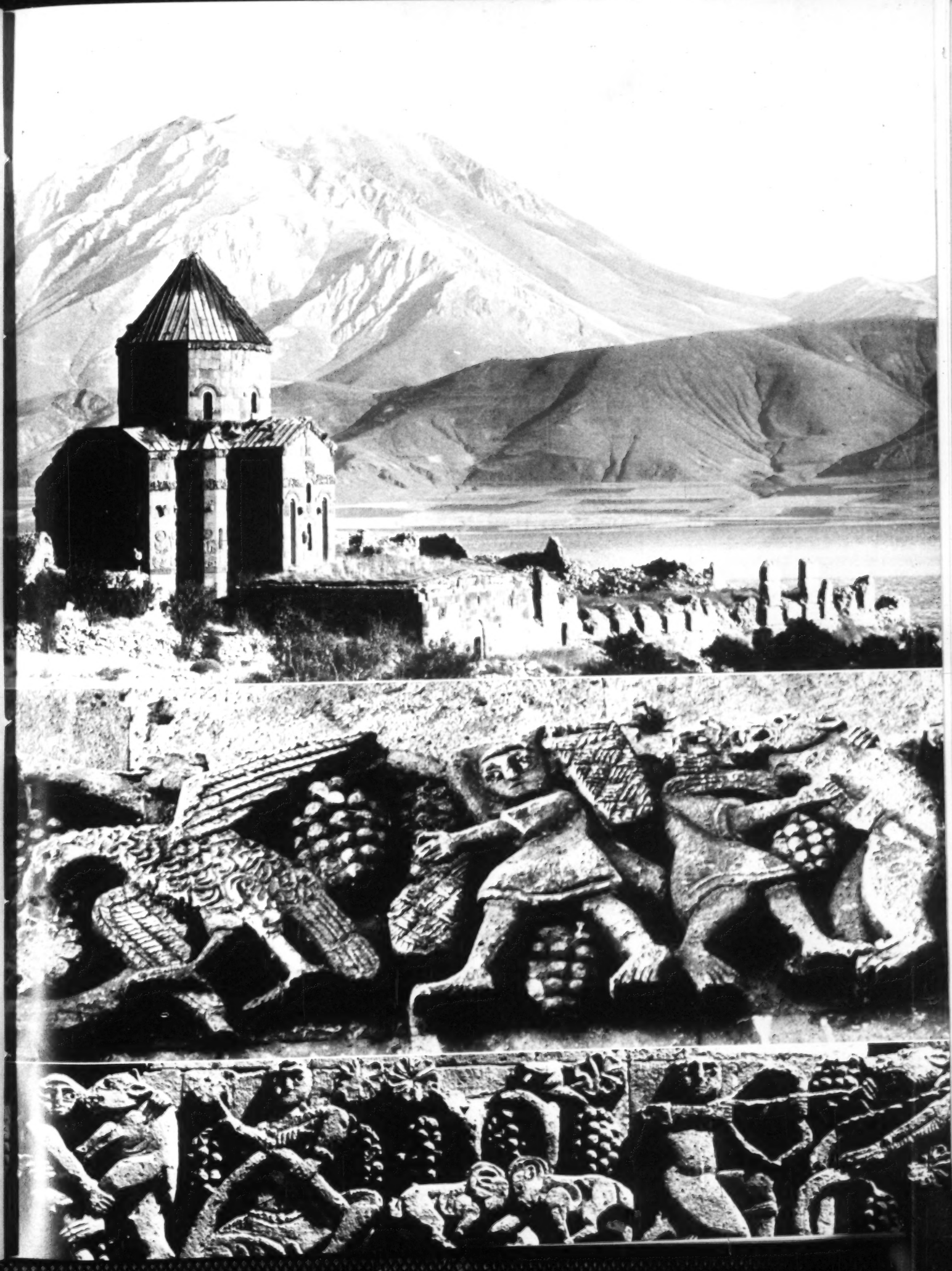


plan of the church



1, the Church of Achthamar standing on an island in Lake Van in the midst of desolate and bare mountains here seen from north-west is covered by sculpture arranged in bands of high relief.

2, 3 show details from the upper and lower frieze with animals fighting and being hunted and men working in a vineyard.



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east-west section — north-south section — plan of the church

1/2/3

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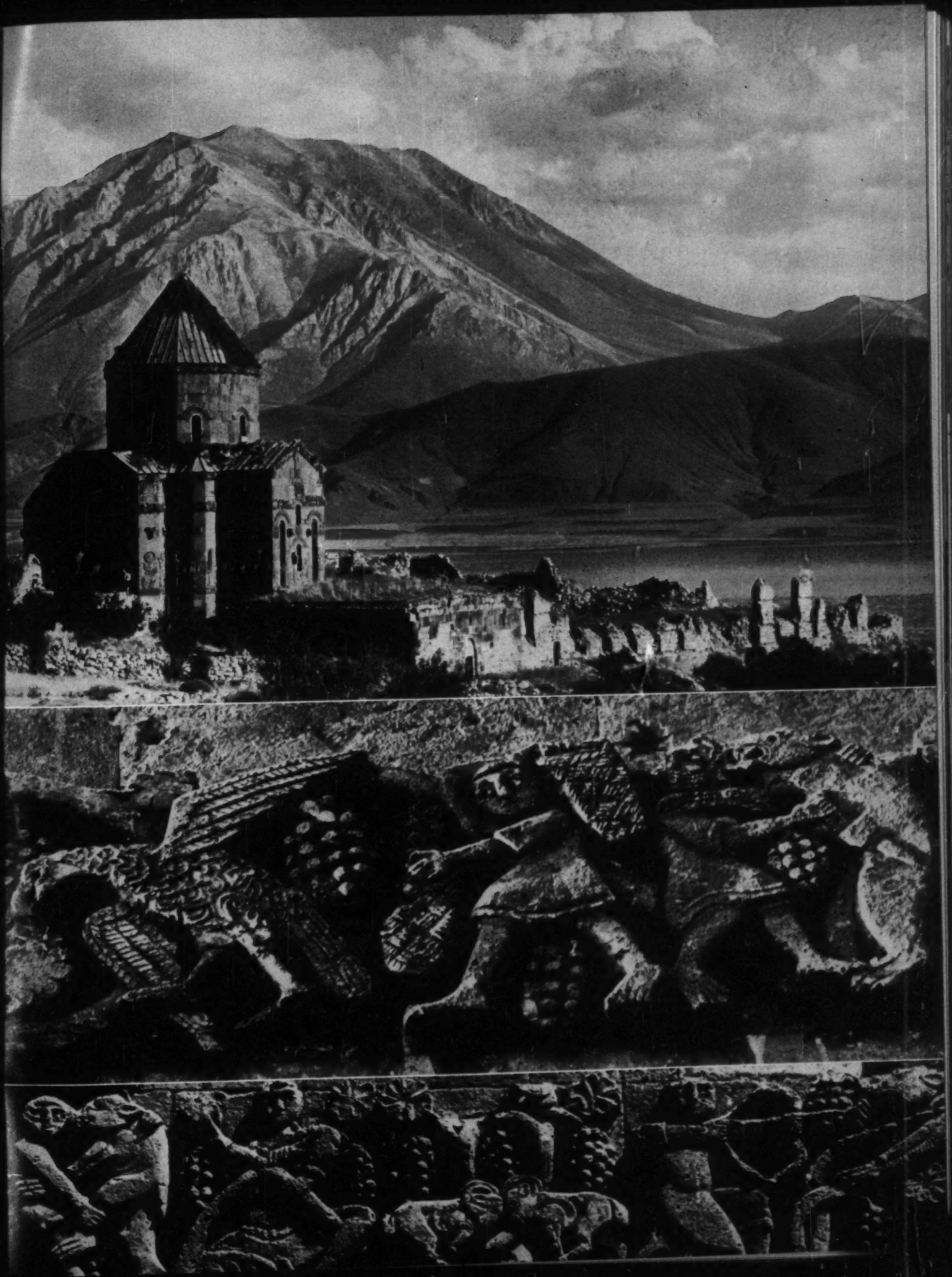
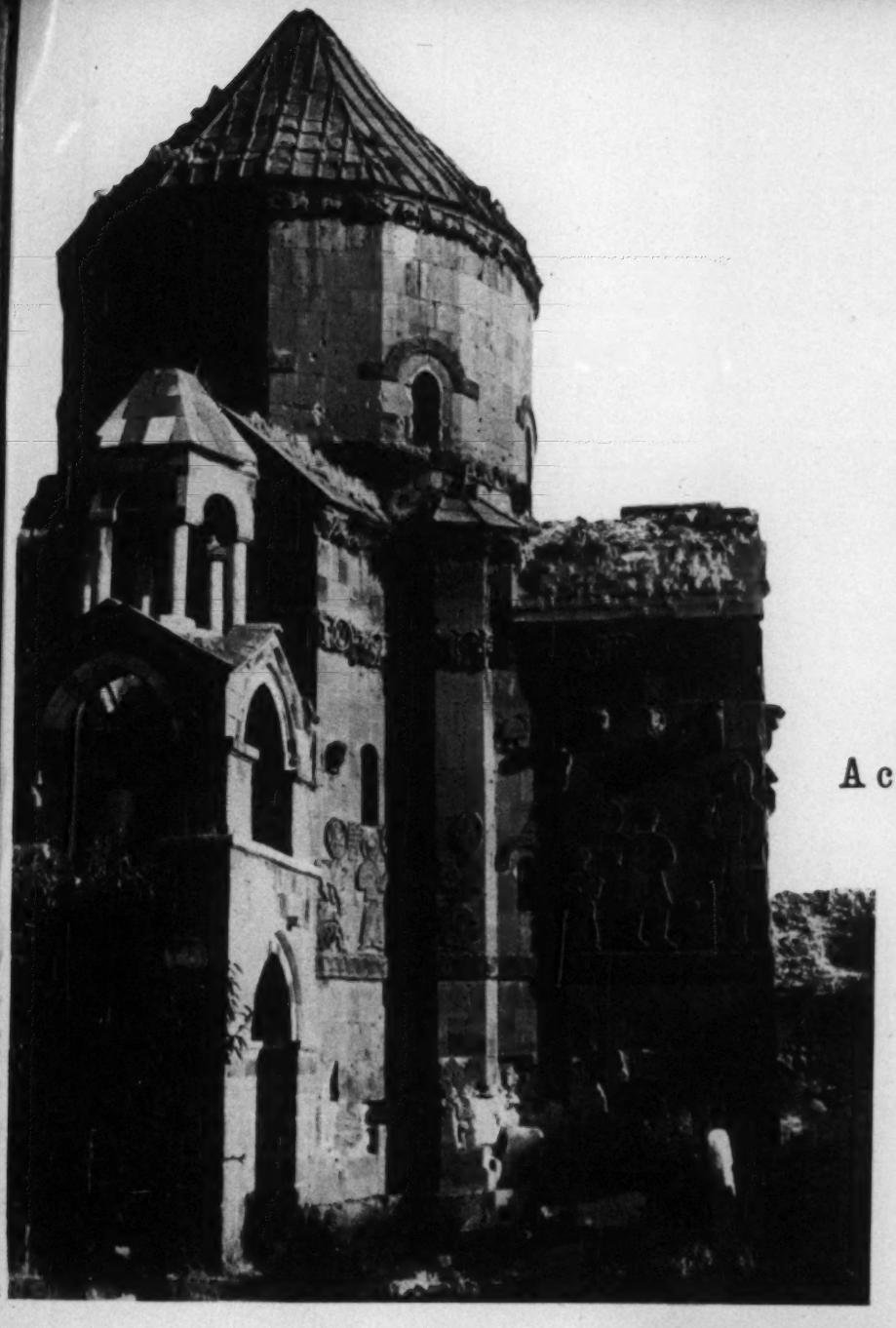




8

Achthamar

9

4/6 | 5/7

The larger scenes are mainly from the Old Testament.

4, Adam and Eve.

5, St. George and the Dragon.

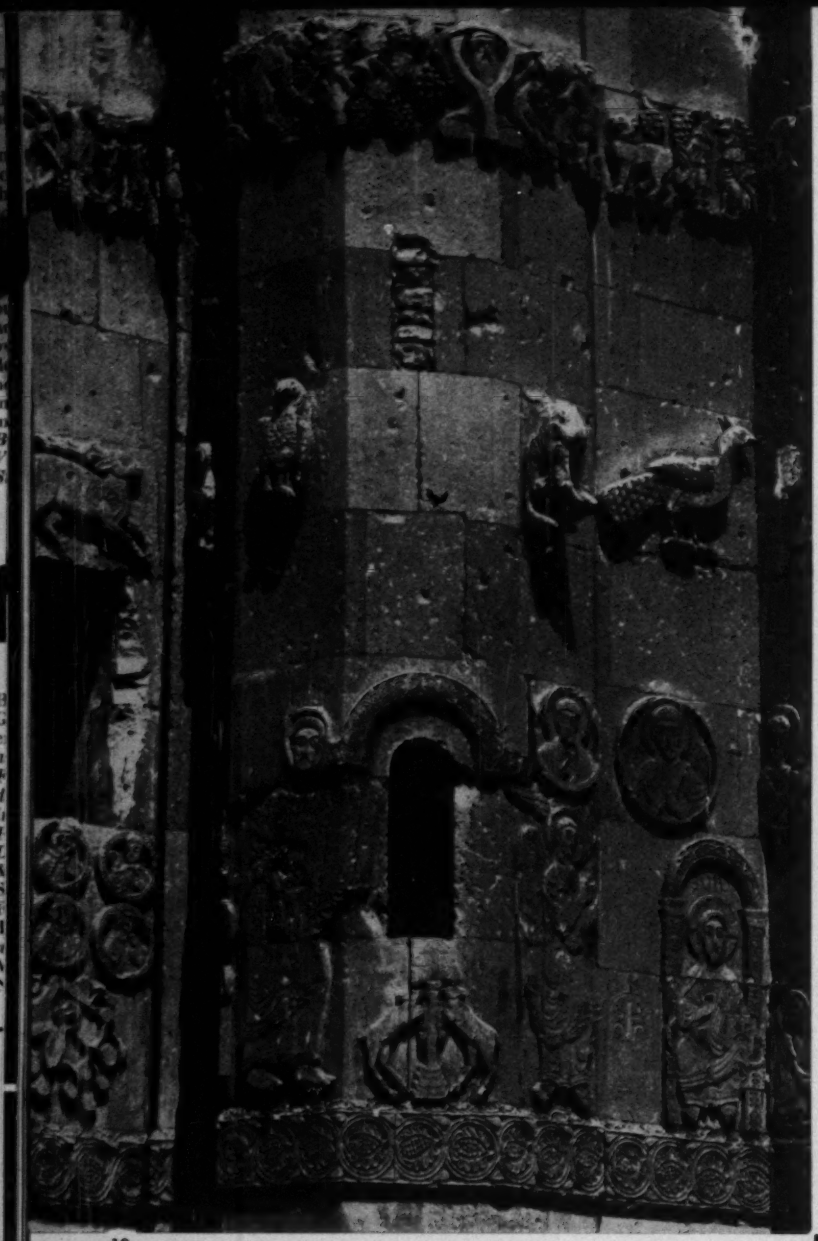
6, a legendary animal, possibly a hippocampus.

7, Samson slaying the Philistine with the jaw-bone of an ass.

8, the Church from the south; on the right the scene of David and Goliath with Saul standing on the left and Samuel in the roundel above him.

9, scenes from the life of Jonah.

Achthamar



10

12

11

10, *part of the south wall showing the apparently haphazard placing of the sculpture between the two horizontal bands.*

11, *King Gagik the donor of the church holding a model of it* (*also frontispiece, page* 174).

12, *the bearded man in the roundel is Adam naming 'all the animals and wild beasts'.*

13, *on each of the gables is an Evangelist looking to the four corners of the world.*

14, *a large carving of the Madonna and Child with the archangel Gabriel.*

13

14

A. 40
HAVERFORDWEST
t. Bride's Bay
BROADHAVEN
TALBENNY
NEYLAND
CAREW
MILFORD HAVEN
Popton Point
PEMBROKE
DALE
ANGLE
CASTLEMARTIN
KOKHOLM IS.
Bristol Channel
St. Govan's Head
1
2
3
4
5
6
7
8
9
10

The map opposite shows superimposed the existing proposals for developing South Pembrokeshire, some of the existing service establishments and derelict camps, and the basis of the REVIEW*'s plan for an industrialized Haven in an unspoilt county. Diagonal shading marks the limit of the National Park.*

key

a. existing proposals for development.

1. New Town to house refinery workers. 2. Esso refinery. 3. railway spur to refinery. 4. proposed new road from east combined with barrage over estuary. 5. jetty for International Bulk Carriers. 6. BP jetty at Popton Point linked to 7 and 8, tank farm at Kilpaison. 9. shows where screening is needed to prevent a break-through of the urbanized view. 10. Steel Company of Wales jetty and iron ore dump, Angle. Of these, 1 and 10 would spread urbanization outside the Haven and should be resisted.

b. some existing eyesores (cross-hatched).

Derelict airfields: Talbenny, Angle and Carew. Tank training area: Castlemartin. Airfield in use for storage: Dale.

c. summary of REVIEW proposals.

New buildings to be contained inside the present visual limits of the urbanized Haven, shown by the thick dotted line which takes account of BP and Esso proposals. Solid black indicates extent of present built-up areas: tartan pattern shows land which could be built on without affecting any distant views. Notched coastline indicates unspoilt diagonal views across the Haven which should be preserved as far as possible.

Ian Nairn

MILFORD HAVEN

Let's give the platitude-spinners the benefit of the doubt: the industrialization of Milford Haven probably really is 'in the national interest', for once. The Haven is the best unused deep water anchorage south of the Highlands; it is partly industrialized already and it has a bad unemployment problem.* (Pembroke Dock had 350 unemployed out of 3200 insured in 1957.) The proposed projects either need deep water or are common-sense extensions of what is there already such as shipbuilding yards and repair docks. Two of them are already through the administrative hurdles (the Esso refinery and the BP tank farm) so that some industrialization is a *fait accompli:* so now what?

Setting aside the larger question of the Government's attitude to National Parks, which constitutes a notable example of double-think, even for this administration, can Pembrokeshire be saved? It certainly can, if we are prepared to plan for two distinct things—an industrial Haven and an intensely rural hinterland—instead of desperately trying to spread the development over the whole county and hope that it won't be noticed. Pembrokeshire is treeless but it is also undulating—i.e. anything that goes on in the valleys is invisible over the next hill; and in addition the seaward end of the Haven is blocked by Great Castle Head and South Hook Point (providing that Esso use their site carefully) and the landward end by the hilly banks of the Cleddau. There is in fact enough topographical cover for an industrialized Haven, invisible from the rest of the county, to be a feasible proposition.

That proposition is compromised already to the tune of several slim stacks (like those at Fawley) at the Esso refinery. The landscape can absorb them if they remain the only interruption (as can be checked by looking at the other isolated masts in the county), and here Esso have it in their power to make or mar the whole Haven. They have bought a thousand-acre site containing several valleys of which at the moment they only intend to use three hundred acres. If these acres are sited clear of the west side of South Hook Point and below the sightline from the ridge east of Herbrandston, the refinery will be almost hidden from any point outside the Haven. On the other hand, if the buildings are

* Largely created by Whitehall, be it said, through its wayward habit of closing down Service establishments and not bothering to replace them with alternative work. The nearest industrial area likely to offer same is sixty miles away (Swansea) and is itself depressed.

A. 40
HAVERFORDWEST
St. Bride's Bay
BROADHAVEN
TALBENNY
3
4
NEYLAND
CAREW
2
MILFORD
HAVEN
5
6
PEMBROKE
DALE
Popton Point
10
ANGLE
8
7
9
CASTLEMARTIN
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Let's give the platitude-spinners the benefit of the doubt: the industrialization of Milford Haven probably really is 'in the national interest', for once. The Haven is the best unused deep water anchorage south of the Highlands; it is partly industrialized already and it has a bad unemployment problem.* (Pembroke Dock had 350 unemployed out of 3200 insured in 1957.) The proposed projects either need deep water or are common-sense extensions of what is there already such as shipbuilding yards and repair docks. Two of them are already through the administrative hurdles (the Esso refinery and the BP tank farm) so that some industrialization is a *fait accompli:* so now what?

Setting aside the larger question of the Government's attitude to National Parks, which constitutes a notable example of double-think, even for this administration, can Pembrokeshire be saved? It certainly can, if we are prepared to plan for two distinct things—an industrial Haven and an intensely rural hinterland—instead of desperately trying to spread the development over the whole county and hope that it won't be noticed. Pembrokeshire is treeless but it is also undulating—i.e. anything that goes on in the valleys is invisible over the next hill; and in addition the seaward end of the Haven is blocked by Great Castle Head and South Hook Point (providing that Esso use their site carefully) and the landward end by the hilly banks of the Cleddau. There is in fact enough topographical cover for an industrialized Haven, invisible from the rest of the county, to be a feasible proposition.

That proposition is compromised already to the tune of several slim stacks (like those at Fawley) at the Esso refinery. The landscape can absorb them if they remain the only interruption (as can be checked by looking at the other isolated masts in the county), and here Esso have it in their power to make or mar the whole Haven. They have bought a thousand-acre site containing several valleys of which at the moment they only intend to use three hundred acres. If these acres are sited clear of the west side of South Hook Point and below the sightline from the ridge east of Herbrandston, the refinery will be almost hidden from any point outside the Haven. On the other hand, if the buildings are

* Largely created by Whitehall, be it said, through its wayward habit of closing down Service establishments and not bothering to replace them with alternative work. The nearest industrial area likely to offer same is sixty miles away (Swansea) and is itself depressed.

splashed boldly across the cliff-top where tree planting is virtually impossible, they will be visible for twenty miles or more. The former alternative doubtless means a more tricky layout but Esso should be prepared to do it—and luckily are retaining S. Colwyn Ffoulkes as landscape assistant (as are BP at Popton Point), who is probably the best man in the Principality for the job. The system invented by Sylvia Crowe and illustrated on page 186 shows how each part of the installation could be tested for its effect on the surrounding landscape.

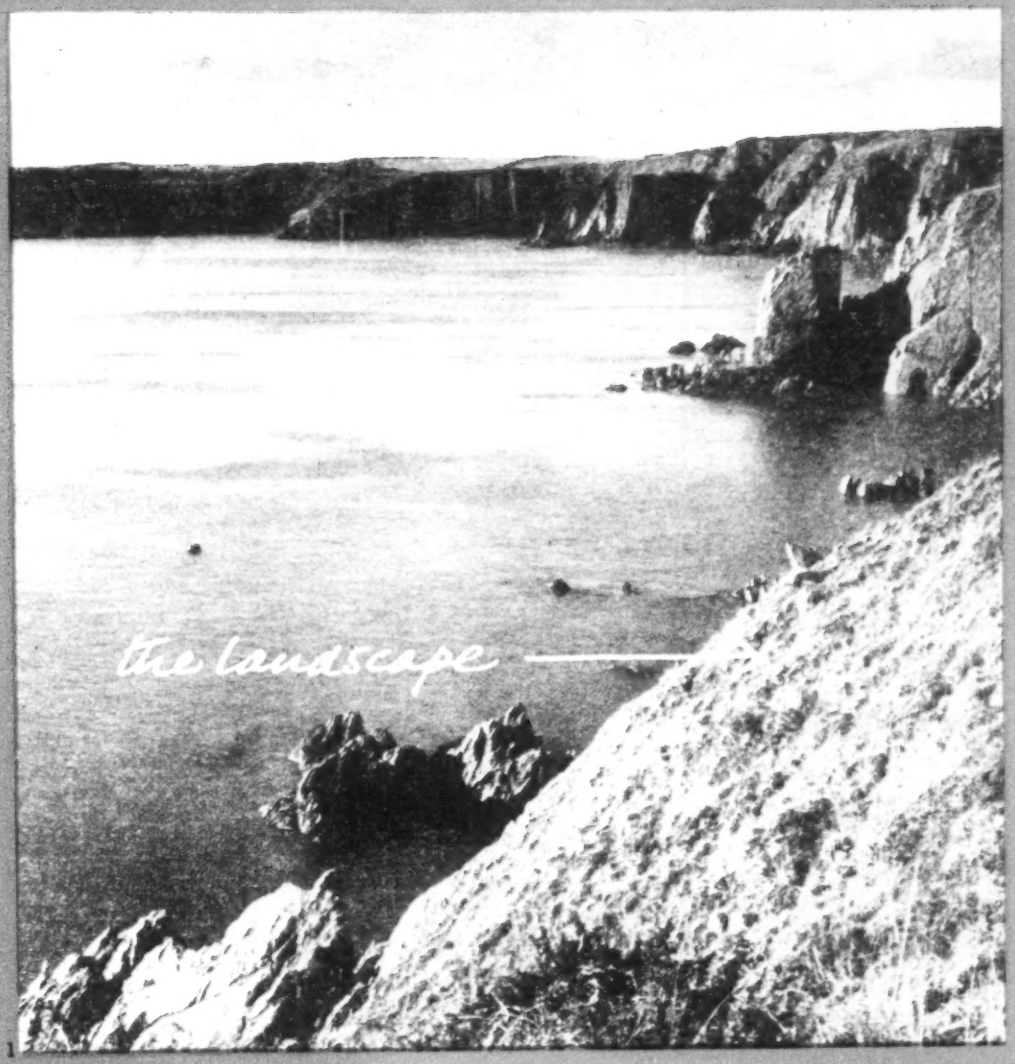
Once the principle has been established everything falls into place, and becomes part of a comprehensive pattern instead of a desperate piecemeal struggle between commerce and amenity. Provided that the dock or refinery plant fulfils this basic condition of being invisible from outside the Haven it can be as industrial as it likes, and here is a great opportunity for a truly industrial detailing carried through right down to the railings and the switchgear: for in Pembrokeshire the tradition has never been lost. As in the Isle of Man there still is a vernacular of functional paintwork for cottages, pubs and factories, although it seems to be utterly ignored by the local architects; examples are given on page 187. The technique could be the salvation of both industrial plant and housing,* and its practitioners are ready to hand; here it is not the familiar architectural situation of a few at the top versus the rest, but the much happier one of a few at the top and a great many at the bottom versus the middle. Even inside the Haven there could be both industry and unspoilt views for almost every householder provided the authorities are prepared to plan tightly to fill existing gaps and to face the difficulties of contour terracing along the hillside, and provided the service departments are prepared to give up space that they no longer need. There are three urbanized areas in the Haven (see map): Milford—Herbrandston, Llanstadwell—Neyland and Pembroke Dock. Any increase of houses and industry here will not alter the balance of the landscape at all because the eye takes them in as being fully urbanized now; in fact all three have many gaps and Neyland could double its population without extending its present visual boundary at all. There are also three completely rural stretches with hardly a house in sight—Newton Noyes to Llanstadwell, Popton Point to the mouth of the Pembroke river and the upper Cleddau; and by a stroke of topographical luck they are diagonally placed so that they fill half of the view from each of the towns. Preserve these diagonal views and contour the houses along the hillside so that each house has a view over the Haven—a sort of modern Clifton or Lansdown—and the industrialization of Milford Haven becomes the finest landscape and townscape opportunity of the century. On the other hand, if the industrial energy is dissipated by suggestions such as that for a new town at Broadhaven, six miles to the north, and fragmentation estates on the edge of every local community, the Home Counties pattern of subtopia (watery gruel like the fringes of Chelmsford or Maidstone or High Wycombe) will simply spread all over South Pembrokeshire. Each housing estate away from the Haven will mean another community disrupted, an improved road all the way to the industrial area, and the Pembrokeshire brand of municipal estate furniture, which is quite rich. Each housing unit put into the Haven could mean an intensification of its existing character.

To do this something like a New Town authority is needed: there just aren't enough resources to pay for the staff in a county where a penny rate only brings in £3,000. The Ministry of Housing has advised the county to prepare a separate development plan for Milford Haven and to improve the quality and quantity of their planning staff but it is not prepared to make any grant to cover the cost thereof, a typical *non sequitur*. In fact the whole fate of Pembrokeshire—and of many other places besides—lies, most undeservedly, inside that four-square Neo-Baroque building at the end of Whitehall. In Pembrokeshire the Ministry can redeem its many past indecisions and equivocations at one blow—and its reputation has probably never been lower, both among planners and the general public.* It can do so without worrying about 'infringement of individual rights' (the Counter-Attack bureau's cases prove repeatedly that that is the hollowest phrase in Britain today) because the development is going on anyway and the choice is simply between whether it is to be done well or badly. Complete *laissez-faire* would please some, complete control would please a few more; a dialectic of a rigorous planning system versus a complete framework for the effective expression of public opinion at all levels might be found to please almost everyone. But the present addlepated mixture of petty restrictions on the little things, an inadequate system of public redress, and aimless drift (*laissez-faire* is too good a name for it) on the big ones, such as National Parks, is by all accounts pleasing nobody outside that four-square Neo Baroque building at the end of Whitehall. It merely drives the planning officers into frustration, the councils and ministries into despotism and the general public either into unhealthy indifference or into a longing for anarchy. Native spirit repelled the threat of dictatorship through force of arms at Fishguard in 1797; can native spirit begin to repel the much subtler but no less dangerous threat of dictatorship through a complete running-down of the existing system at Milford Haven in 1958?

* Though in fact the first job is to provide enough work for the people who are there already, and then to fill in gaps in the streets of Pembroke Dock and Milford Haven.

* The Minister's advice on Milford Haven has so far been limited to a pious hope that trees would be used for screening. Trees are hard to rear in Pembrokeshire anyway, and then tend to grow horizontally rather than vertically, due to the continuous S.W. wind.

Pembrokeshire need not be ruined by industrialization: the choice is still open. If industry and housing are designed piecemeal and spread out over the whole country the result will be an endless multiplication of scenes like Newgale, 3; if they are concentrated inside the Haven to a landscape plan and designed to make use of the existing vernacular techniques typified in the farm at Capeston, 2, the result could be magnificent. The corollary of concentration would be that the rest of the Pembrokeshire coast, like Lindsway Bay, 1, just beyond the Esso refinery, would stay unspoilt.



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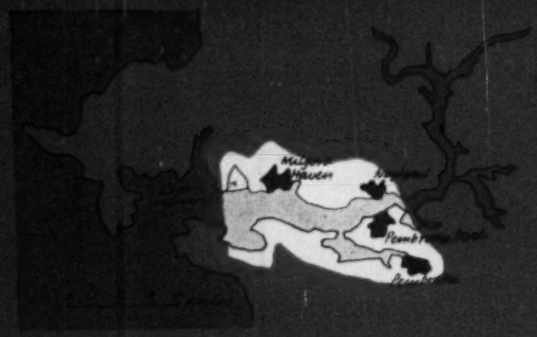


← The aim

An industrialized Haven within the visual boundaries of t[he] present urbanized areas plus those or those involved in the Es[so] and BP proposals invisible from the rest of the county an[d] preserving where possible the diagonal countryside views in[side] the Haven. The area from which the urbanized Haven [is] visible is shown white on the map.

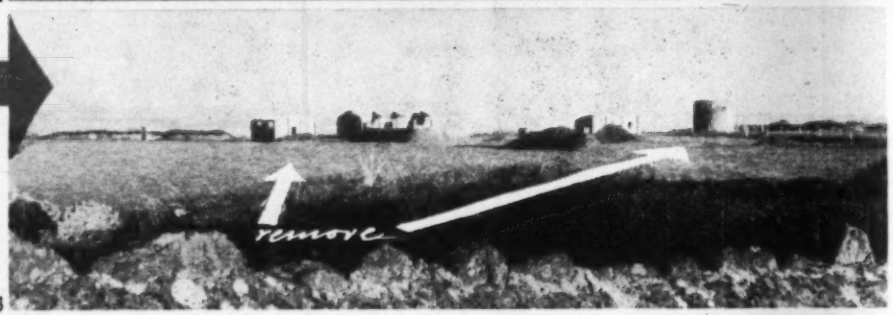
1 landform

Milford Haven is just beyond the large ridge: it could be as big as Tyneside and still be invisible from outside. The photograph also shows that Pembrokeshire is windswept and almost bare of large trees: the ground itself is the only practicable camouflage.

4

2 skyline

Everything beneath the Pembrokeshire horizon is completely hidden: everything above it may stand out for five or ten miles, because of the lack of trees and the bare contours. This is part of a derelict war-time camp, one of many in the county.



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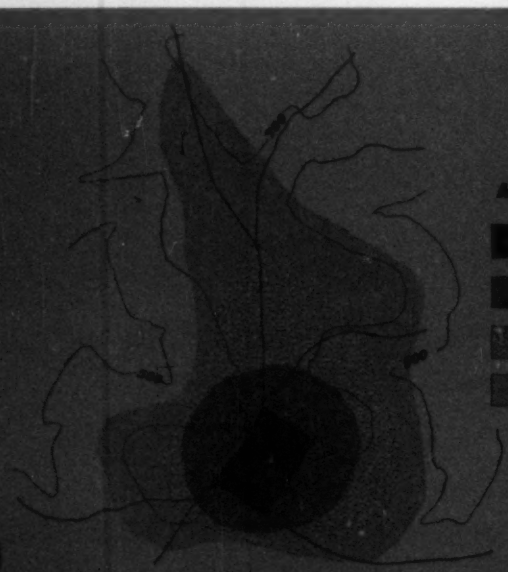
3 urbanized view

This is part of the outskirts of Pembroke Dock. This view and many like it are effectively urbanized, already yet only a fraction of the land is built on. To infill the remainder would not affect any view that is not already spoilt and would prevent new inroads into the surrounding countryside.

6



← The technique of landscaping

This technique, invented by Sylvia Crowe, can be applied to any form of interruption in the landscape, and is taken from her forthcoming book, 'The Landscape of Power.' This example is the radio station on Crowborough Beacon, Sussex, and shows the successive zones of influence obtained by circumnavigating the site: urbanization, visual dominance and psychological influence. These effects are complex and can only be tested on the site, depending on contours, planting and unexpected juxtapositions of single objects and steep slopes. For an area like Milford Haven a collection of lightweight easily erected dummy masts or easily inflated structures resembling buildings might cost less than an elaborate set of models, and all really big objects could then be given a dress rehearsal which could be rearranged for discussion of alternative sites and groupings.

Intrusion

Current practices in Pembrokeshire and some of the names by which ye shall know them. 7, *ribbon development between Milford and Steynton.* 8, *council estate, Neyland.* 9, *Angle airfield.* 10, *new footpath at Pembroke Dock.* 11, *GPO building near Angle.* 12, *Pembroke Dock.* 13, *Fire Station, Haverfordwest.*

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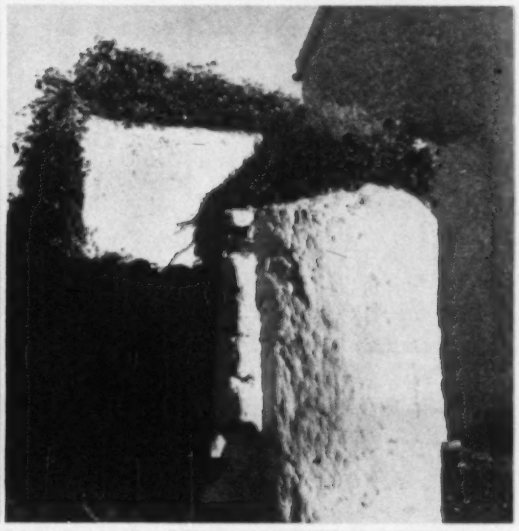
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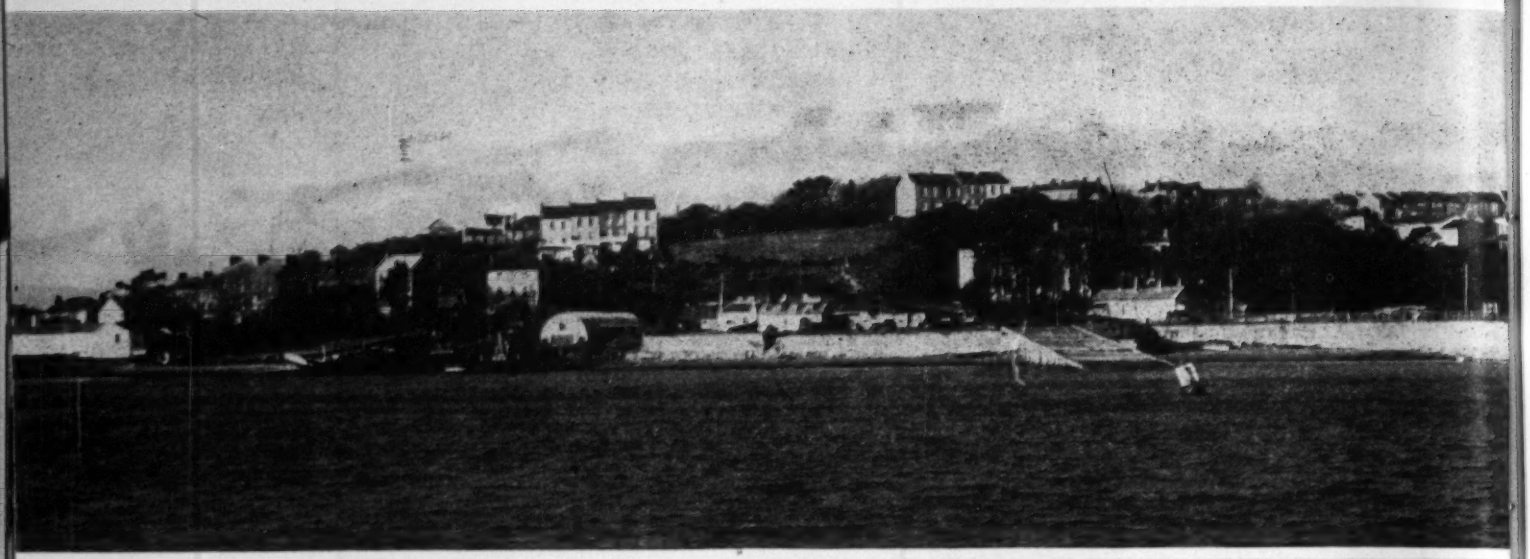
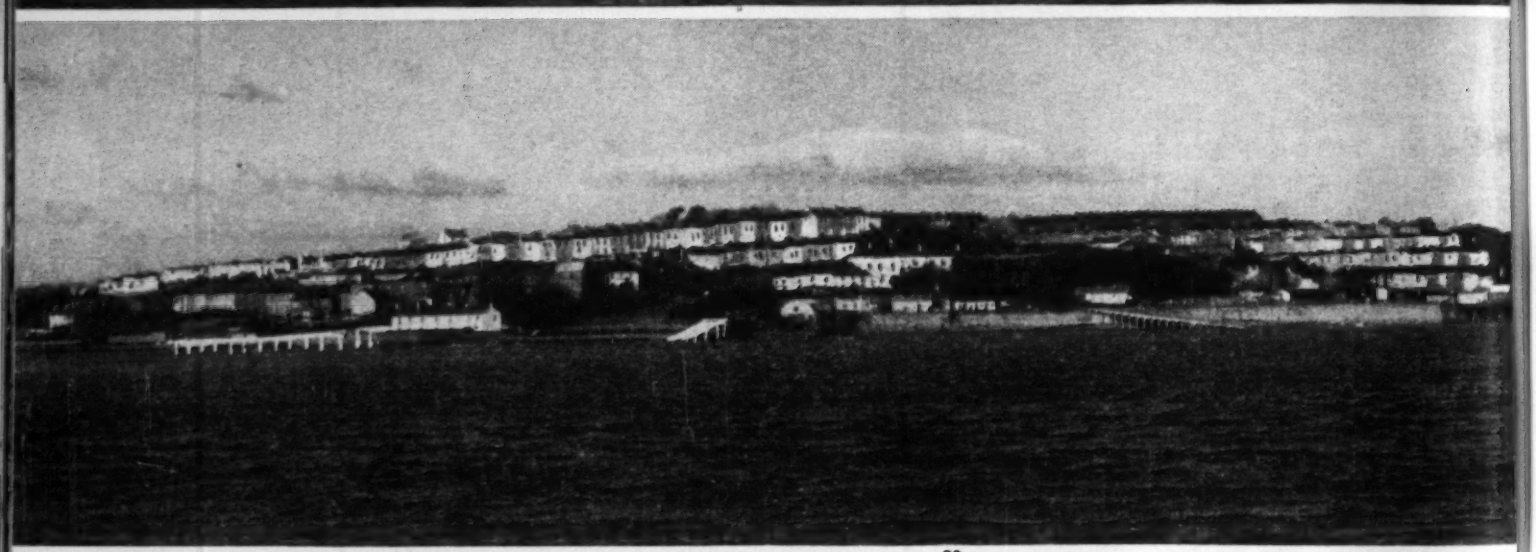
18

19

Vernacular

Native traditions still vigorous, not preserved: 14, *functional tradition at Llanstadwell.* 15, *at Neyland, painted buff and ochre.* 16, *at Angle, colour washed white and cobalt blue.* 17, *a detail of the outbuildings of* 16. 18, *pub at Milford Haven: buff walls, black trim, red lettering and lion.* 19, *typical Pembrokeshire sunken road near Angle.*





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21

The Haven New Town. 20, *Neyland from the Pembroke Dock Ferry, an early nineteenth century layout which remained half-finished when the Irish packet terminus was moved to Fishguard.* 21, *a distant view as it might look if completed, building modern houses keeping the original pattern of contoured terraces, and extending and augmenting the jetties. Neyland could double its population in this way and add to the Pembrokeshire landscape in doing so.*

ADMINISTRATIVE PROPOSALS

1, a New Town type authority covering both sides of the Haven from Herbrandston to east of Pembroke Dock, but excluding Pembroke Town, under a landscape architect as co-ordinator and paying compensation to the County equivalent to the loss in rateable value, handing the Haven back if so desired at the end of a set time—say 25 years.

2, an end of 'permitted development' inside the authority's area for an experimental period to see whether it does work and just how much 'freedom' is thereby curtailed.

3, a showdown with the Service Ministries and the Ministry of Works so that Pembrokeshire can be treated as a test case for the use of sappers to clear away all derelict buildings, with the costs worked out to show just how expensive their removal becomes if the sappers' training costs are offset against it.

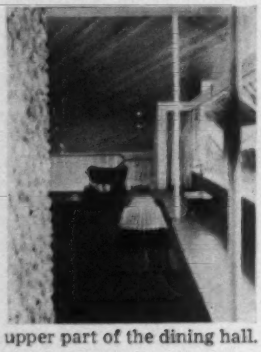
4, the use of the authority to try out experiments to forestall the impending breakdown in local government by bringing electors and electorate into much more direct contact. For example, by making all committee sessions public, by putting major decisions to a town vote, and by instituting some form of independent arbitration for local matters less formal than a public inquiry.

HOUSE AT WEST WITTERING

ARCHITECTS | **WELLS COATES AND MICHAEL LYELL**

1. south elevation with the garden store and the rear wall of car port on the right, and the path leading to the grass foreshore and beach in the foreground.

HOUSE AT WEST WITTERING



2. living room looking towards the upper part of the dining hall.

3. living room looking towards the sea.

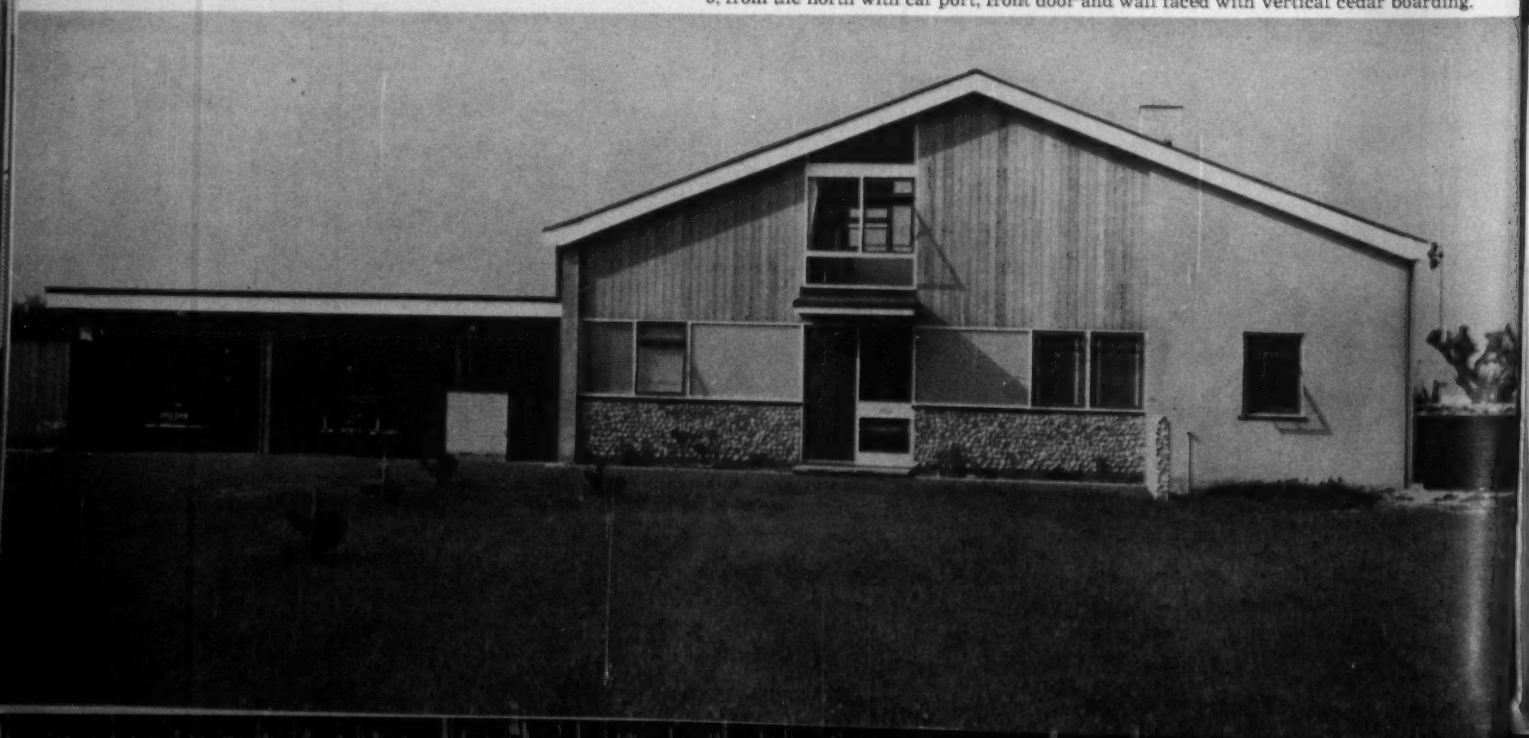
4. dining hall looking towards the kitchen.

This is a summer house for one of the architects and his family at East Strand, West Wittering, seven miles from Chichester. The site is ¾-acre of level ground with a grass foreshore leading to the beach on its southern boundary.

The living-room extends over the whole of the first floor and has a south wall of glass (shielded by internally operated sunblinds), providing a view of the sea and the Isle of Wight. This floor is linked with the ground floor at the eastern end by a staircase which leads to the dining-room and extends through a height of one-and-a-half storeys to the diagonally pine-boarded sloping ceiling of the living-room.

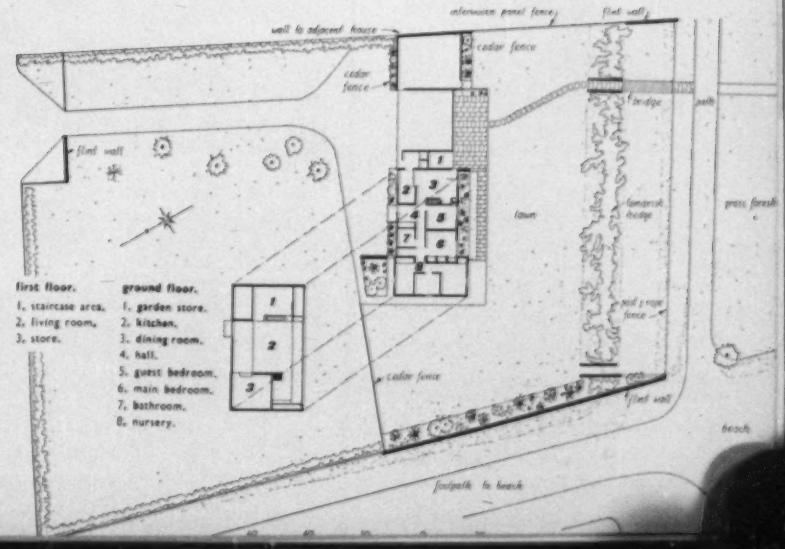
The east and west external walls are 11 in. cavity construction with 4 in. insulation block outer skin rendered and 4½ in. Midhurst white common brickwork as the internal facing, which is unplastered. North and south elevations are 9 in. brickwork faced with random flint, vertical cedar boarding and obscured glass panels. Local flint is used on several areas of the house, the fireplace and garden walls. The internal walls are built in 4½ in. Midhurst whites and 3 in. breeze plastered. In the construction of the horizontals the ground floor is a 5 in. concrete slab, damp-proof membrane, screed

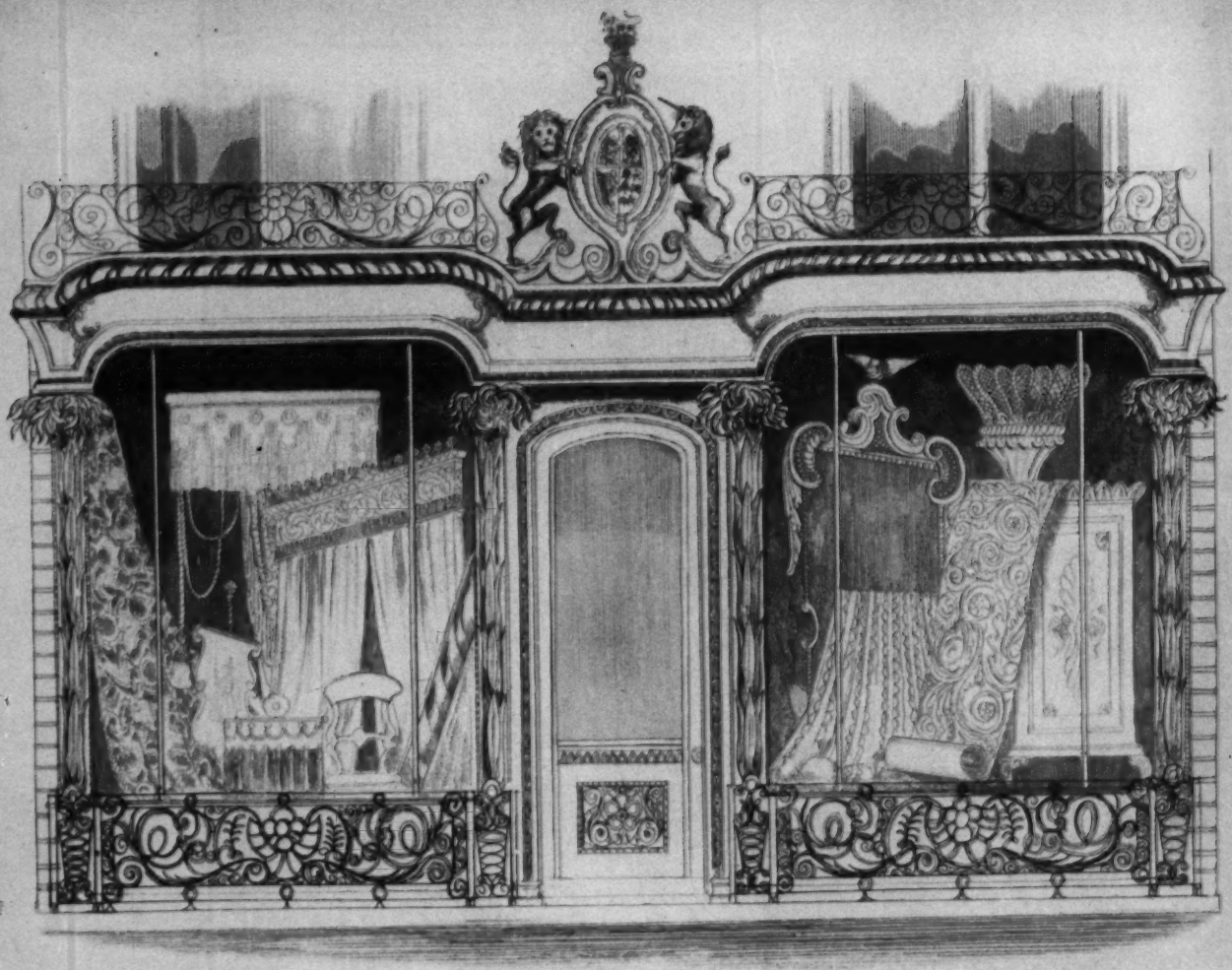
5. from the north with car port, front door and wall faced with vertical cedar boarding.

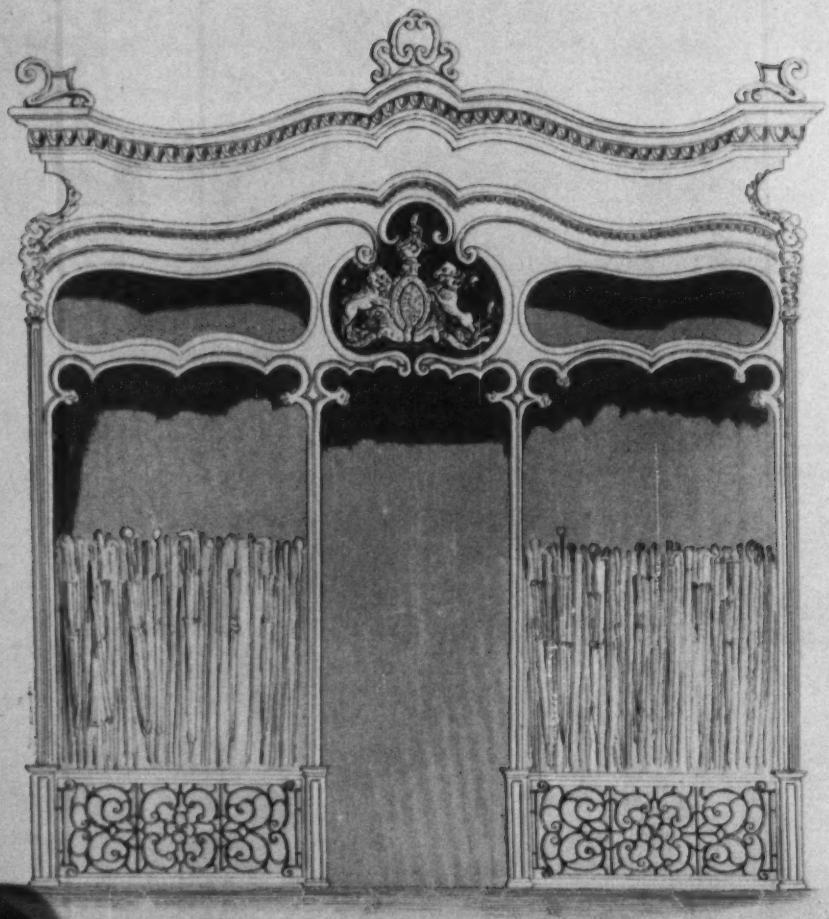


6, close-up from the south, showing the glass wall of the first floor living room shielded by sun blinds, vertical cedar boarding and flint base wall.

covered with PVC floor tiling and the ground-floor ceiling is of gypsum lath and setting coat ; ¾ in. polished chip-board covering 8 in. by 2 in. joists is used for the first floor while the roof has 9 in. by 6 in. main beams with 8 in. by 2 in. joists running along slope of the roof and Western red cedar shingles laid at a 20° pitch. There is an electric water heater in the linen cupboard ; the house is heated by oil-filled electric radiators and a solid fuel stove in the living-room.







As early Victorian technology and early Victorian commerce reacted upon one another in the design of shop-fronts, the areas of plate-glass became greater, the departures from accepted architectural rules more spectacular, but the results were not necessarily incongruous nor incompetent, as these two examples of Plate Glass Louis Quatorze from Whittock's *Shopfronts of London* will show—Saunders and Woodley's, above, and Sangster's umbrella shop left, both in Regent Street, and both built in the late 1830's. The response evoked by such facades at the time of their execution was mixed, as Miss Eldridge points out in her article opposite, but at least one leading journal of the time found that the style had a "striking and most magnificent appearance."

MARY ELDRIDGE

THE PLATE-GLASS SHOP FRONT

'The vast sheets of plate glass in several of the principal shops mark the astonishing improvement and progress effected during the last twenty years in the manufacture of that beautiful article.' (Tallis's *London Street Guide*, 1847.) The expansive but vague epithets, unfortunately characteristic of many references to shop-fronts during that formative twenty years, certainly convey to us the sensational impact made on the eyes of the early Victorians, but they are based, it is well to remember, on comparison with panes of crown glass. In J. Young's *Designs for Shop-fronts*, published in 1828, no pane of glass is more than five feet in length, and the average is less than four; the book was considered sufficiently up to date to be re-published in 1843. The introduction of plate-glass was not, it seems, accompanied by any violent break with traditional shop-front design: a series of columns or pilasters—one at each side of the door and one at either extremity of the front—supporting an entablature by way of fascia. The main difference was that the shop-fronts increased in height, and the window-panes in size.[1]

The chemist's shop, 1, (c. 1828) at no. 8 Argyle Street, Bath, which must be one of the oldest surviving shop-fronts actually designed for plate-glass, is a handsome and well-preserved example of this style. Unfortunately much of the glass was blown in during an air-raid, and all that is left of the old glazing is the panes in the window looking up Argyle Street, and possibly the lowest row of panes in the front window. The curved upper panes seem to foreshadow the long vertical windows of the 1850's, with round-headed arches.

A pair of shops in Stamford, 2, numbers 13 and 14 St. Mary's Street, is a late example of this type. The premises were built in 1851 on the site of the George and Angel, an old coaching inn;[2] the alley between them being the entrance to the old Farmer's Rooms.

The whole conception has an unusual urbanity which would grace a real street junction. This was, in fact, the original intention, for it was thought that the road would be carried through to the High Street. The shop-fronts themselves are an integral part of each building, and have some distinction, with the recession of the entablature between the columns, and the honeysuckle design on the frieze. Originally the columns and entablature may well have been grained in imitation of stone following the custom of the period. The material fashionable for shops varied from year to year, white veined marble, for instance, being in vogue in 1835, according to Nathaniel Whittock (*Shop-fronts of London*). The doors and other woodwork would also be grained, possibly like mahogany—sometimes the genuine article was used—and the capitals and decorative details gilded.

On the east front of no. 13, the large window spaces between the columns contain four vertical sections, each 32½ in. by 97 in. and glazed with two panes, the lower 59 in. and the upper 38 in. long. They touch, but there is no glazing bar between them, a deception which gives the impression of a single larger pane at less expense. This style of glazing is said to be the original, although some of the glass has been replaced.[3] Apparently no alteration has been made to the windows of no. 14, which has been in the continuous occupation of the Grimes family who built the premises.

Shop-fronts in the classical style were, however, too often turned out in a stereotyped form. A critic in the *Westminster Review* (Oct., 1841), complaining that such a hackneyed use of the ancient orders showed a very mistaken notion of reverence for them, put the matter neatly: '. . . thousands of diminutive copies of the same originals are to be seen all over the town, all apparently turned out of the same manufactory —for which reason we wonder that no-one should have established one where columns may be purchased ready for use like chimney-pots [this was actually done a year or two later]. This would save a great deal of trouble in making designs . . . it simply being sufficient to write so many columns, Athenian, etc. . . . size so and so, and so many feet of plate glass between them.'

Whittock thought the orders might be used where appropriate, as for shops connected with learning and the arts, but a purist (*Builder*, 1848) objected that they were quite unsuitable in any case, because the openings which had to be left between the columns for windows were inevitably too large for classical proportion, and 'why should a style be employed merely for the purpose of being mangled?' The answer was that builders could not suggest anything else, as readers were quick to point out to the Editor; who replied that 'if they employ an able architect and express a willingness to pay him fairly for his trouble, they may be more successful.' Perhaps not very helpful advice, for with architects of lofty ideals it was not so much a question of money as of honour: they considered the designing of shop-fronts *infra dig*. As the *Westminster Review* observed, it was a mistaken but excusable attitude: shop-fronts, far from being trivialities, by their nature imposed aesthetic problems difficult to solve, but an architect could hardly be expected to put much heart into this work, when it was likely to be ruthlessly mutilated as soon as it was carried out, if not before, just to 'please the demon of fashion' (Elmes' words in *Metropolitan Improvements*, when describing how the Regent Street shop windows were so constructed that they could very easily be altered; the fronts were supported on the inside by slender iron columns).

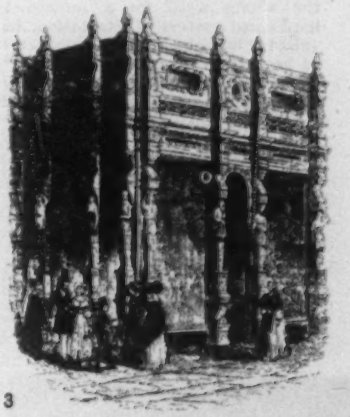
Classicism did not have everything its own way, however. Other eclectic tendencies were showing themselves, though unfortunately for the curio collector there is now little trace of them. The Louis XIV style is mentioned in the *Architectural Magazine* in 1838 as 'one of the latest improvements in this department; and in combination with the immense panes of plate-glass now used, and accompanied by rich gilding on a pure white ground, it has a striking and most magnificent appearance.'[4] There was also the neo-Elizabethan style, 3, an example of which was erected in 1841 on the corner of Oxford and Berners Streets. The ornament, moulded in Atkinson's cement, was picked out in colours and gilt on the Oxford Street front; 'tasteful details' which, in the opinion of the *Mirror*, 'must prove attractive and consequently beneficial in a commercial view.'[5] Two years later a still more spectacular edifice arose at 76 Oxford Street: the showrooms of Cottam & Hallen, 'one of the most remarkable of the London palaces of trade.' They were designed after the Alhambra (perhaps by Owen Jones), their ornament and main features being constructed of cast-iron.[6]

But though Oxford Street preferred to borrow its art from the past, it fully appreciated the mechanical ingenuity of the present. In 1861 a revolving shop-front was constructed by a Mr. Coombs of the Borough for a firm of advertising outfitters in New Oxford Street. It was 11 ft. 9 in. in diameter, 12 ft. high, weighed 2½ tons, and was activated by a heavy weight below, connected with moving wheels. It was said to be extremely draughty.[7]

The repeal of the excise duty on glass in 1845 removed a serious constraint on the use of plate-glass. Its popularity advanced so rapidly that by 1852 it had effected a material improvement in the appearance of the streets of London and the larger towns, according to the *Builder*; which had no regrets for the 'lop-sided, cant-bowed windows' common even a decade earlier. At the same time there came a break with the classical tradition in shop-fronts, though it was so deeply ingrained that it persisted until the orders had

2, *the two corner shops in Stamford, nos.* 13 *and* 14, *St. Mary's Street date from* 1851 *and are late examples of a much earlier type.*

3, *below, the Neo-Elizabethan shop on corner of Oxford and Berners Streets, London,* 1841, *was published in the 'Mirror' of the same year.*



3

1, *in Argyle Street, Bath: this is the handsome design with four Ionic columns and imposing doors of the pharmacist, c.* 1828, *still showing the large coloured bottles.*

[1] Increase in height specially noted by N. Whittock, *Shop-Fronts of London* (1840) and customs in decoration.

[2] Information from occupier.

[3] There is similar glazing in a builder's shop in Marylebone Lane, of about the same period.

[4] Two are illustrated in Whittock's book: Sangster and Saunders and Woodley, both in Regent Street. (There is a copy in the British Museum.)

[5] Line drawing in the *Mirror*, April 3, 1841.

[6] Reference in the *Mirror*, August 23, 1845; no drawing. (Jones is said to have designed a Moorish shop interior c. 1840 in Southampton.)

[7] *Builder*, 1861, p. 902.

4, Curtis and Co., 79, Baker Street, W.1, c. 1860: vertical emphasis resulting from the economical sizes of plate glass then available.

degenerated into a collection of vestigial remains. The size of the standard pane of plate-glass became the influential factor in shop-front design—though perhaps 'design' is the wrong word for a somewhat haphazard process of adaptation. In 1852 the largest size obtainable seems to have been about 8 ft. by 14 ft.[8] The price increased considerably with size and a pane larger than this would not have been an economic proposition, though it could have been manufactured. The usual size was a vertical strip 7 ft. to 8ft. by 3 ft. to 4 ft.[9] These strips, with their heavy glazing bars of wood (sometimes mahogany) or metal, gave a strong vertical emphasis to the shop-front, in marked contrast to the criss-cross of the glazing bars of the smaller rectangular panes.

A shop-front which demonstrates this change very clearly, while retaining classical features, is Curtis's, the chemist's shop, 4, at 79 Baker Street. The decorative detail (originally gilded) might suggest a date earlier than c. 1850, but in fact the premises did not change to commercial user until 1857, and Curtis went into occupation in 1861.[10] The shop has many of its original fittings, including the brackets inside the windows supporting the great bottles. The shutters are of the coiling revolving type, an invention which was reported in 1837 in the *Architectural Magazine* as a novelty in use at the offices of the 'Reformer' in Ipswich. The early examples were operated by a winch handle connected with ratchet wheel and pulley, and a similar mechanism still exists at the side of Curtis's window. It was out of date by 1860, when Clark's patent self-coiling shutters had been on the market for several years.

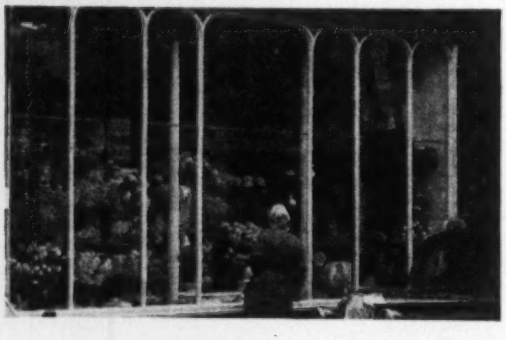
The panes in Curtis's window have a heavier individual framework than was customary at the period. It is more usual to find the panes supported by bars, either rounded or of v-section, often curving into a round or flattened arch (though in many shops, particularly the more modest ones, the panes were simply inserted as plain vertical strips). Very often the round-headed windows had a rudimentary capital at the springing of the arch, and the spandreis were filled in with engraved glass or decorative woodwork. Eileen's Flower Shop, 6, New Bond Street, Bath, Ward's, Northgate Street, Bath, 7, and Rouse's, Wigmore Street, W.1,[11] 5, are representative of this type, which was to remain popular for another generation. In the earlier examples the panes are often divided horizontally by a sash-bar, usually made thinner and more inconspicuous than the vertical bars. This type of shop-front generally has pilasters at each end, supporting an entablature which became less classical as time went on, until at last the fascia gave up all pretence of consisting of cornice, frieze and architrave, and became just a broad band with a decorative border below and above. Eileen's 'cornice' has a pendant border of little decorative knobs, a device which can be seen elsewhere in Bath and the district. Ward's fascia sign is commendable for its bold simplicity; Rouse's also has some pleasant Victorian lettering (not shown in photograph).

The brackets, usually moulded in Roman cement, could be obtained ready-made from a builder's merchant.[12] Their use to terminate the fascia is a practice which became almost universal in the latter part of the century, so it is interesting to find a reference to it in the *Architectural Magazine* as early as 1834. At the time when the classical entablature was still in use, the cornice, if given its proper return, was liable to impinge on the neighbouring frontages. Builders ingeniously solved this problem by hollowing out the frieze at either end like a scotia, so as to shorten its upper edge. It was such an old trick that by the 1830's builders often seemed to forget its original purpose, and employed it where it was unnecessary. Architects were much vexed by this offence against classical canons, and the *Architectural Magazine* suggested that, instead, the cornice should be finished against a block supported by consoles, as was already done in one or two London shops. A suggestion which wrung this despairing protest from George Dymond, a Bristol architect: respect at least the illusion of the important structural function of the architrave and do not cut through it; let the brackets be laid on it, as the frieze is. (c.f. Harris & Son, Green Street, Bath.)

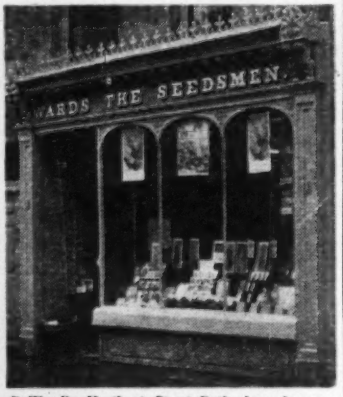
A pretty compromise between old and new was Law's (later Ridgeway's) shop at 102 New Oxford Street. This had bow windows of moulded plate-glass between its series of Corinthian columns. It was erected in 1859 and must, therefore, have been one of the earliest instances of the use of moulded plate-glass for shop-windows[13].

There were recurrent complaints that large plate-glass windows resulted in an architectural solecism: the lower part of the elevation became an ugly gap, and the upper storeys seemed to be supported precariously by glass alone. Even in 1837 the *Architectural Magazine* noted this fault in a shop in Fish Street Hill, which was 'one uninterrupted height of window from the stall board to the cornice under the first floor window . . . the sash bars are either black or very dark brown or grey; so that even the divisions of the squares are scarcely seen.' Shop-fitters evidently anticipated the later capabilities of plate-glass by the deceptive use of glazing bars. It is hard to find early

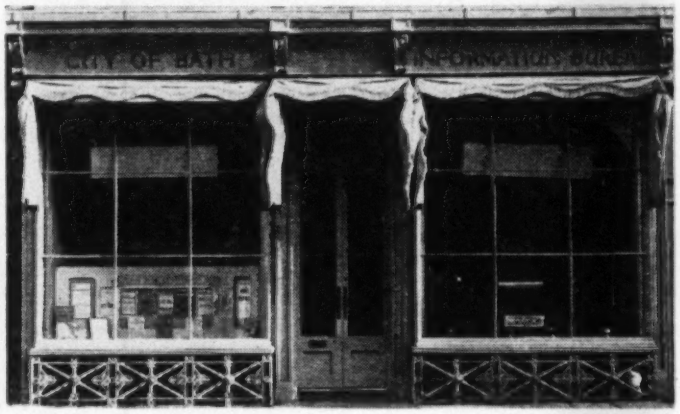
5, Rouse and Co., 12, Wigmore Street, W.1, c. 1850: round-headed windows with rudimentary capitals and decorative spandrels.



6, right, Eileen's flower shop, 21, New Bond Street, Bath: c. 1850-another example of the rounded head.



7, Ward's, Northgate Street, Bath, shows decorative woodwork in the spandrels but disposes of capitals at the springing of the arch, as in 6.



8, Abbey Square, Bath, c. 1840. An early example of a lofty shop-front, window 9 ft. in height. Curiously enough, some of the slightly later shop-fronts such as 6, are not so lofty as this, though their individual panes of glass are considerably larger.

9, an example of a cornice finished against a block and supported on consoles, at 14, Green Street, Bath.

[8] Two articles in the *Builder*, 1850 and 1851 (p. 175), on plate glass. Size of plate glass now limited only by cost of machinery required for larger sizes. Mirrors 14 ft. by 8 ft. now comparatively cheap. (Within living memory 4 ft. by 3 ft. was reckoned a good size, and only the wealthy could afford more.) Bed of polishing machine usually 15 ft. by 8 ft. Neither Pilkingtons nor Chance could tell me much about the size of plate glass at this period.

[9] Empirical—I have measured quite a number.

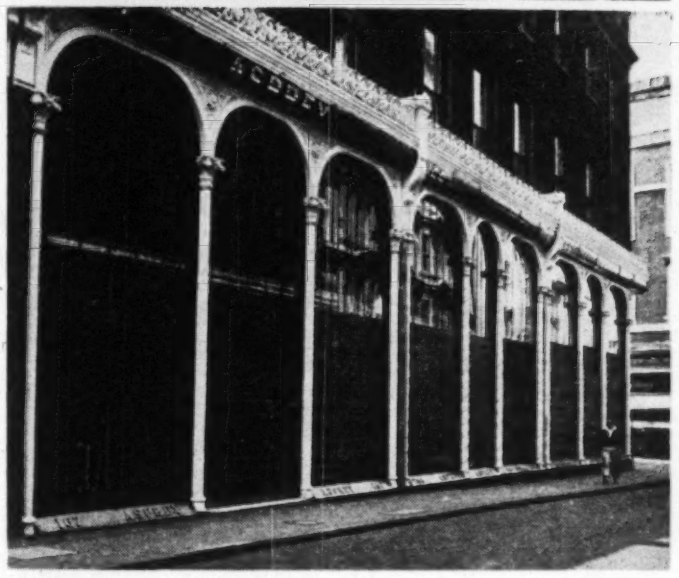
[10] Dates taken from London Directories. Curtis's do not know much about the history of the shop, but are very proud of it, and would like to think it older. The brackets are similar in design to some shown in a contemporary drawing of a chemist's shop in S. Audley Street, in 1861 (*London and Provincial Street Architecture in Victorian Age*, March, 1861).

[11] A shop opened at 21 New Bond Street in 1850; previously it was billiards-rooms. There was a change of occupier at Rouse's around 1850. It has been known as Rouse's since about 1810.

[12] E.g. John Herbert & Sons, 42 Parker Street, Drury Lane. Advertisement in the *Builder* in 1848.

[13] Unfortunately Ridgways have no picture of it, and I have been unable to find a photograph apart from the one in Dan's *Shop-fronts Old and New*, 1907.

10

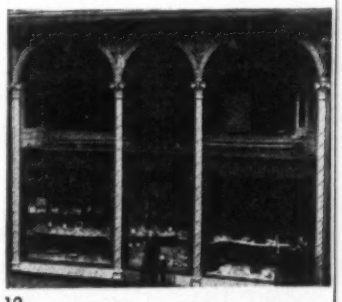


11

10, 11 *and* 12, *Asprey's New Bond Street, W.*1: 12 *is No.* 166, *the original part of the shop, c.* 1865, *later enlarged to its present size, as shown in* 11. *Panels of glass of this size did not appear until around* 1860.

instances of what the *Westminster Review* called 'outrageous display affected in regard to plate-glass'; perhaps we are so used to much bigger outrages that we overlook the prototypes. The shop c. 1840 in Abbey Square, now the City of Bath Information Bureau, has panes approximately 3 ft. square, giving a window 9 ft. in height—loftier than some later shops with the long vertical panes.

Windows on the scale of Asprey's 10, 11, in Bond Street do not appear until around 1860. No. 166 New Bond Street conforms in its present layout to a ground-plan of 1864 in the firm's possession (the adjoining window-bays are later additions): a window has replaced the original central door, of which the boot-scrapers still fixed in the pavement are the sole remaining visual evidence. The date would seem to be confirmed by an article in the *Builder* in 1866, which made a general reference to several handsome new shops erected in Bond Street during the past two years. The article was, however, mainly devoted to Benson's shop, which received particular praise because it avoided the cavernous

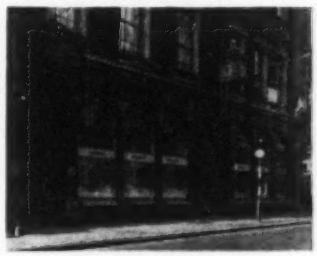


12

insecure appearance of some modern shops.

Benson's not only looked but was secure. The insertion of the new window had been a major building operation, during which the building had been shored up by 'Drew's patent shoring needles'; the excised walls had been replaced by cast-iron stanchions carrying girders 2 ft. deep and 14 in. wide. Apparently this sort of alteration was too often carried out with a lighthearted disregard for structural safety. With corner shops (cf. the design of 13 and 14 St. Mary's Street, Stamford) it was a common practice to remove the walls to make returned shop-fronts, with the door in the angle. The *Builder* warned of the danger to stability, when no proper provision was made for support; and it was able to point an effective moral when a shop in Pond Street, Fulham, suddenly collapsed one morning in 1848.

Benson's has not been much altered in essentials, apart from the addition of the portico at the south end. The Portland stone fascia was originally unpainted, and was inlaid with a black marble tablet bearing the firm's name in gilt letters (the tablets with the street numbers still remain). The window arcading and the serpentine Lizard marble columns with gilt capitals are unaltered, though gilt arabesques in the spandrels have been removed; the mahogany vestibule is original. The glass and sash-bars are replacements, but the style of glazing has not been changed. The interior contained painted decorations by a Mr. Hatfield of Marlborough Street, but no record of them remains.[14]



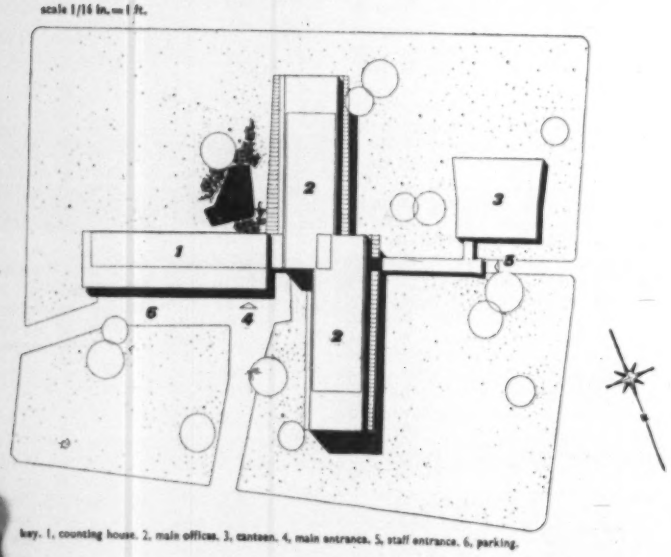
13, *J. W. Benson Ltd., 25, Old Bond Street, W.*1. 1865, *and little altered since then apart from repainting and the addition of the portico.*

The windows were protected by revolving iron shutters, but the end of universal shuttering at night was approaching. At a meeting of the Architectural Association, in 1866, a Mr. Ward, an American architect, mentioned a growing custom in New York: tradesmen, especially in jewellers' shops and other places where valuables were stored, were ceasing to put up their shutters at night. Instead, they left on the lights inside the shop, and raised the screen between window and shop; the resulting publicity was found to discourage burglars.

The *Builder* wrongly attributed the design of Benson's shop to F. P. Cockerell, who repudiated it sharply in the next issue, pointing out that he had merely acted as surveyor for the freeholder. The builders, Drew & Co., must, he supposed, have designed the shop; and next time he was honoured by mention in the *Builder*, he hoped it would be for something of more interest to its readers than a shop-front. It was an ungracious rebuff. The distinguished architect's brusque dismissal of shop-fronts must have been painful to the *Builder* which had a more discerning estimate of their importance, but it can have been no surprise. Years before, the *Builder* itself had drawn attention to the incompatibility between the demands of commerce and art: 'So long as the greatest surface of window is made a sine qua non, it is hopeless to look for propriety of architectural character.' These terms were not acceptable to architects, who, unlike the *Builder*, seem to have been sadly lacking in Victorian missionary zeal; and trade went unreformed on its own vulgar but remunerative way.

[14] The alterations were made 25-30 years ago. Benson's have no records as they were all destroyed during the War. There is a life drawing in the *Builder*, 1866, p. 153.

1, *from the north-west; counting-house on left.*



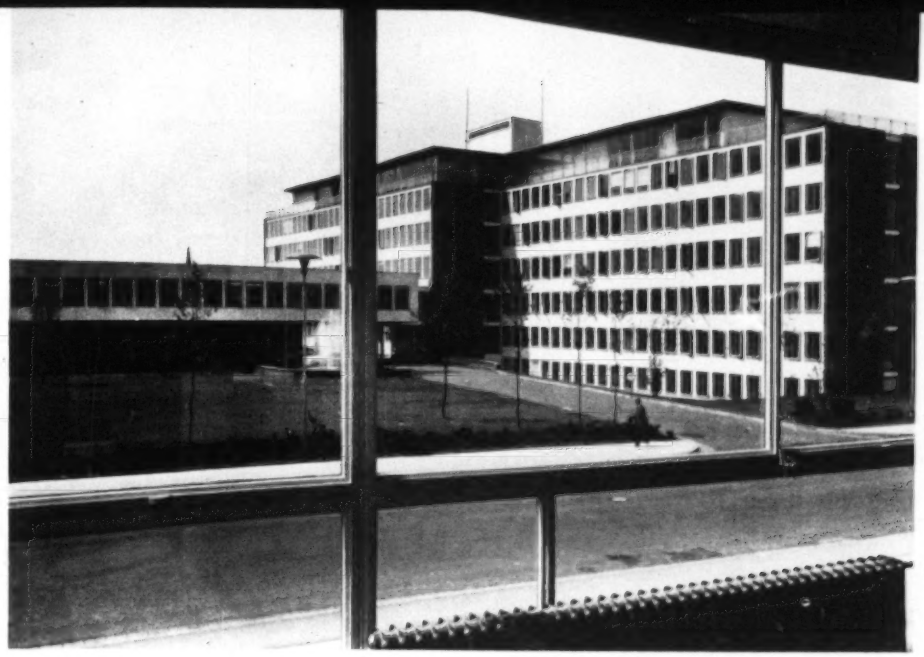
key. 1, counting house. 2, main offices. 3, canteen. 4, main entrance. 5, staff entrance. 6, parking.

OFFICES AT RHEINHAUSEN, GERMANY

ARCHITECTS: HENTRICH AND PETSCHNIGG

This new administration block for the Rheinhausen Foundry Co. was won in competition in 1954, and is sited in a domestic area of a medium size industrial town near Duisburg. It provides for an office staff of 500 on seven floors with three passenger lifts and two small goods lifts for filing and Hollerith cards.

The main construction is reinforced concrete resting on an 80-100 cm. thick reinforced concrete raft because of the danger of rising water from the Rhine nearby. The basement contains central heating and electrical plant; every room is ventilated by air which is drawn into two chambers on the roof and passed through distribution installations on each floor where it is purified, heated and blown into the rooms through ducting. Heating is by convector heaters fed by heat exchangers linked to the central plant; each room has an independent thermostat.

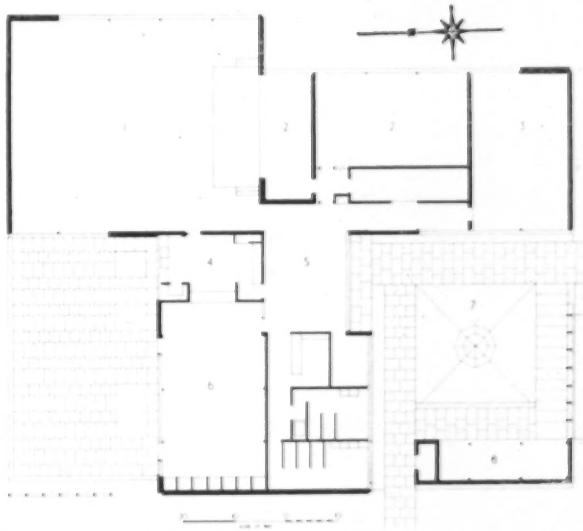


2, day view of the main entrance to the offices at Rheinhausen from a nearby block of flats. The roof structure houses air-conditioning plant.

COMMUNITY CENTRE AT STEVENAGE NEW TOWN

DEVELOPMENT CORPORATION ARCHITECT, L. G. VINCENT
ARCHITECT-IN-CHARGE, RAYMOND GORBING
ASSISTANT ARCHITECT, THOMAS CARTER

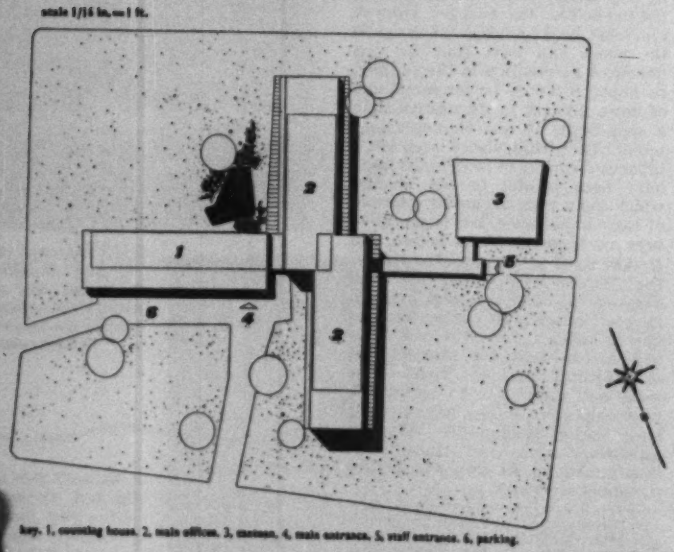
This community centre serves the Bedwell neighbourhood, with a population of ten thousand, and is part of the neighbourhood centre. The 'T' shaped plan is approached by a partially enclosed cobbled forecourt with covered area for prams and cycles. The spacious entrance hall giving access to all rooms is in the low wing together with kitchen, common room and toilet accommodation. The high wing contains main hall, committee room and lecture room sound insulated from quiet rooms by the store. The building is steel framed on a 10 ft. module supporting roof lattice trusses 1 ft. 6 in. and 2 ft. 6 in. deep, dictating the external depth of the mahogany veneered plywood fascias. Gable walls are 11 in. cavity brickwork; the glazed infill panels are set in front of the structural frame on a 40 in. grid. The floor finish generally is grey-green thermoplastic tile, walls are generally white or pale grey except for panels of bold wallpaper—e.g. the use of 'Palladio' facing the doors in the entrance hall. Basic heating is obtained from thermal storage heaters operating at night on cheap tariffs, augmented by forced convection heaters and tubular heaters mounted at the bottom of the windows.



key. 1, main hall. 2, committee room. 3, lecture room. 4, kitchen. 5, entrance hall. 6, common room. 7, forecourt. 8, bicycle shed.

3, entrance forecourt from Bedwell Crescent, bicycle store on left, lecture hall on right.

1, *from the north-west; counting-house on left.*



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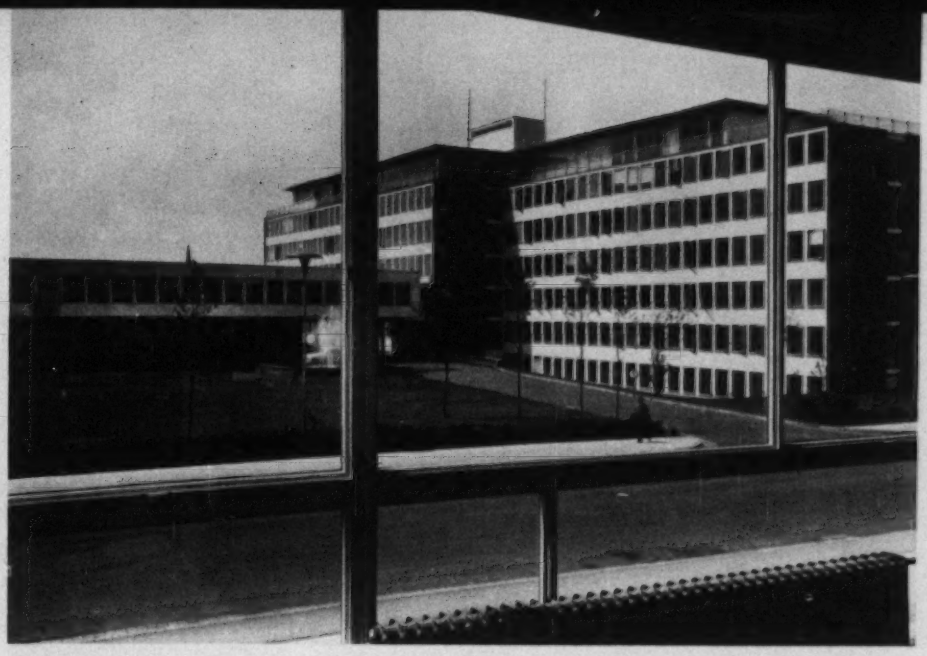

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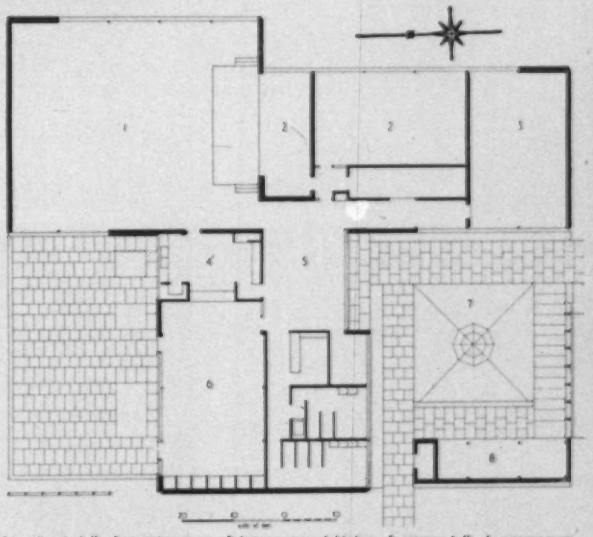

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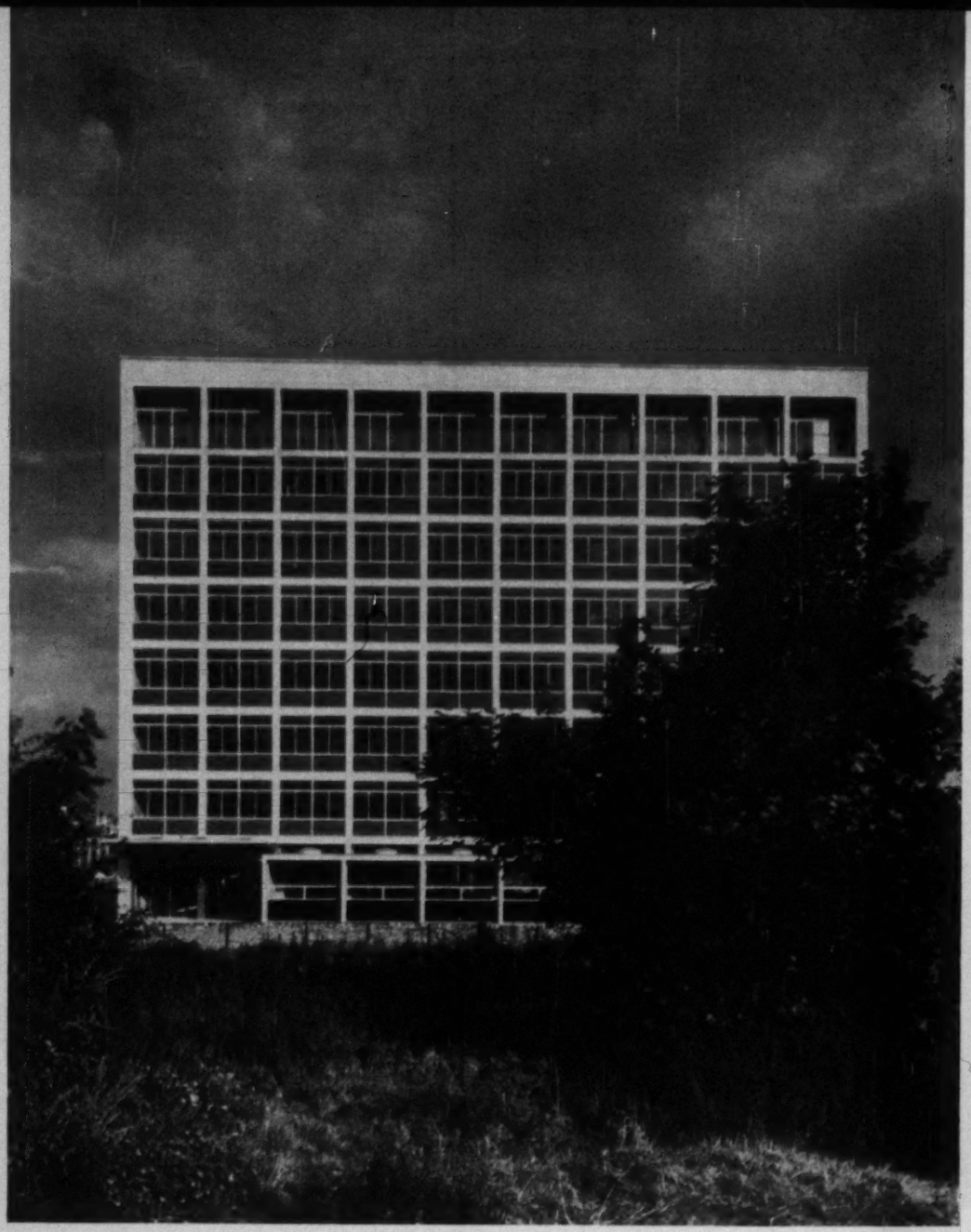
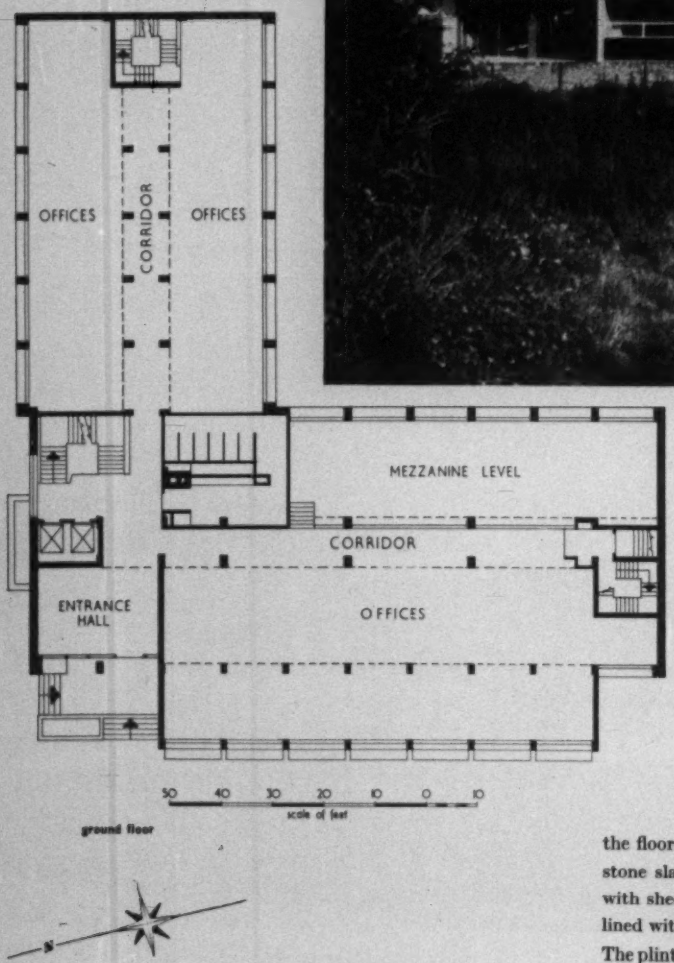


4, entrance side of Roman House from the west, looking across Wood Street.



ground floor

OFFICES IN LONDON WALL, E.C.2

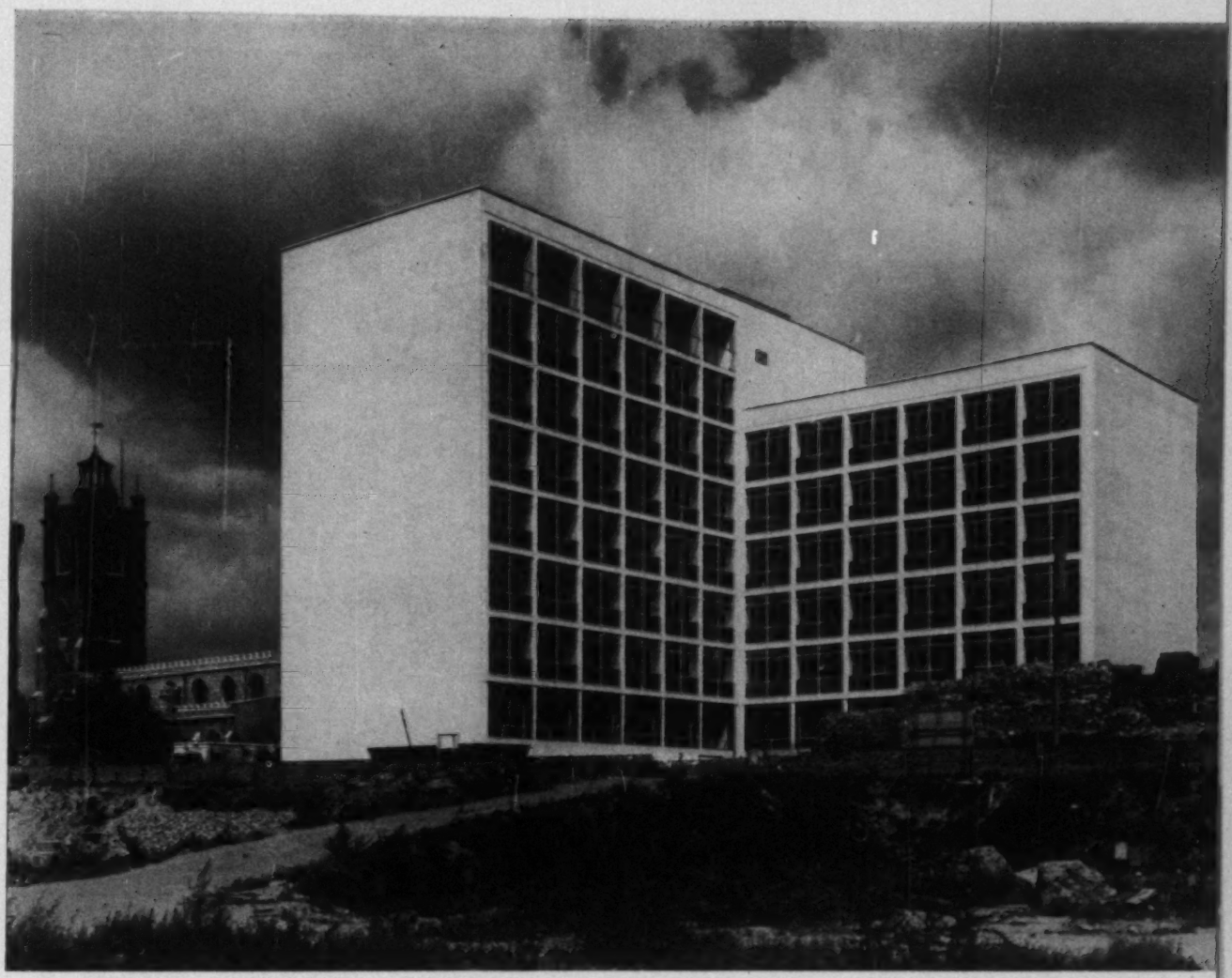
ARCHITECT: R. N. WAKELIN

of CAMPBELL JONES and SONS

ASSISTANT-IN-CHARGE: J. M. THOMAS

These offices are in London Wall, planned to fit into a comprehensive development area of the City of London and preserving part of the Roman city walls in a terraced public garden adjoining.

A maximum lettable floor space of 61,400 sq. ft. has been provided together with a car park for 14 cars in the basement. The construction is of reinforced concrete on piled foundations with hollow pot floors. The wall beams and tie beams are within the thickness of the floors. Externally, the flank walls, columns and wall beams are clad with Portland stone slabbing 3 in. thick. The window openings are formed with steel sashes glazed with sheet glass and grey glass spandrel panels. Below first-floor level the columns are lined with Swedish grey marble and the infilling panels are of black toughened glass. The plinths are of Vert Olivia marble. Internally, walls and ceilings are plastered throughout and the floor finish in the offices is linoleum and terrazzo.

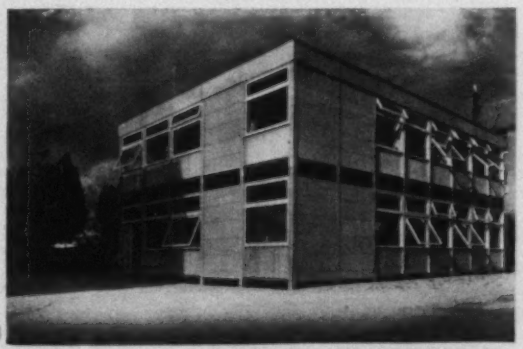


5, courtyard with Roman wall in foreground and St. Giles' Cripplegate behind.

LABORATORIES AT SHERBORNE, DORSET

ARCHITECTS: ARCHITECTS' CO-PARTNERSHIP

This building houses the chemistry department of the Sherborne school for girls and has been constructed to take a third floor if required later. The site is part of a disused tennis court. The construction is a prestressed precast concrete frame as first used in the Ministry of Education School at Watling, with columns at 80 in. centres clad with precast fan-faced concrete slabs. Externally they are coloured black (using black cement mix) at first floor level and faced with Siena marble; elsewhere window units and internal exposed structural members are painted white.



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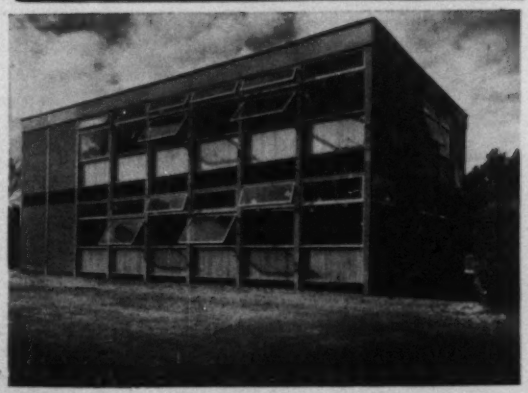

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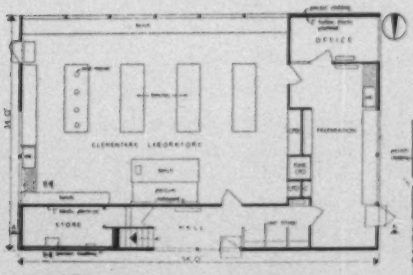
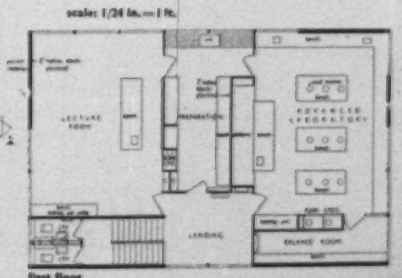




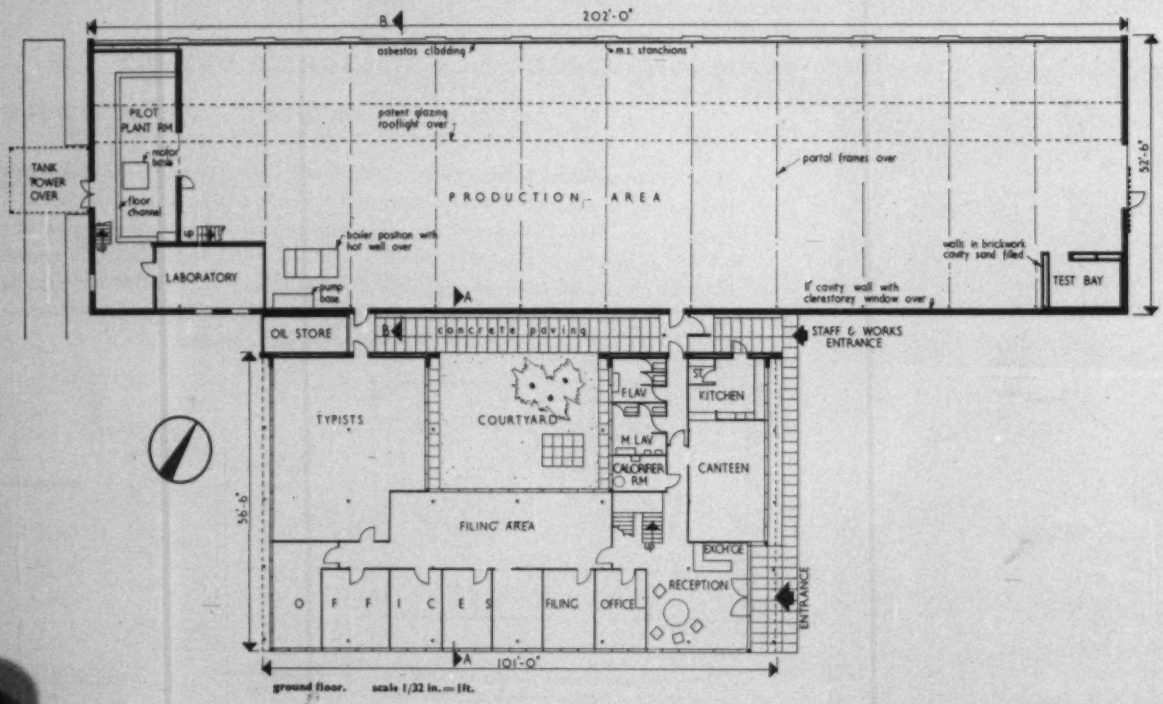
6, from the south west; the facing slabs in the middle have black cement mix with a dark exposed aggregate. 7, the south side.

8, recessed porch and entrance hall on east end of office block.

FACTORY AT CAMBERLEY, SURREY

ARCHITECT: JOHN BICKERDIKE. ASSISTANT: PETER GOWER

This factory in Doman Road, Camberley, is for Sharples, who making high-speed centrifuges. Offices and production area had to be separate due to planning restrictions and both had to be capable of future extension. The site is a trading estate: offices and factory are joined by two single-storey wings framing an internal courtyard. The factory construction is steel portal frames and 11 in. and 13½ in. cavity brickwork (stockbrick facings), with a roof of aluminium decking. The office block has directors' and secretaries' rooms and the drawing office on the first floor to be as quiet as possible; the steel frame has walls offset from columns with cantilevered double cross-channels carrying precast concrete floor and roof beams. This has saved an additional row of stanchions and allows them to be placed half-a-module off the grid to avoid interference with cladding or partitioning. The edge steel channels contain a timber curtain wall designed by the architects on a 40 in. grid; solid spandrel panels are light blue.



CRITICISM

CHANDIGARH AND THE SENSE OF PLACE

Genius Loci is a term which may well fall into disfavour through either indiscriminate or over-use. Its widespread currency today does, however, indicate an increasing awareness of the importance of context; a reaction against the tendency to photograph and record objects abstracted from their total environment. Nothing can in fact stand substitute for direct experience compounded of myriad impressions both conscious and unconscious. Nevertheless attempts are now being made to convey this totality of experience—the specific object against the dim 'awareness,' the aura of its environment, the Genius Loci. For only in such terms can an object's existence as a living form be truly assessed, and only by an awareness of the 'Spirit' can further development expand instead of explode the whole. Any such attempts must risk criticism from all quarters for they represent the personal reaction—rational and irrational—of an individual.

Corbusier's early sketches of the site at Chandigarh reveal an understanding of 'place' which is at once identifiable with direct personal experience. A flat plane dispersed with the dark monsoon green of trees, fields of fresh grass green and sedge spreading to low hills of eroded red-brown earth fissured with sunlight: beyond these the purple of Himalayan foothills uncertain with rain, piled with a froth of cumulous mounting to Tibet. The relationship which seems suggested, in Corbusier's incisive line, between the two bold blocks of High Court and Secretariat and the nearest hills is at once appreciated, they grow—in perspective—from the hill scale, are born of the landscape; this seems to anchor the remaining development, sprawling uncertainly, to the only definite 'line of reference'—the hills.

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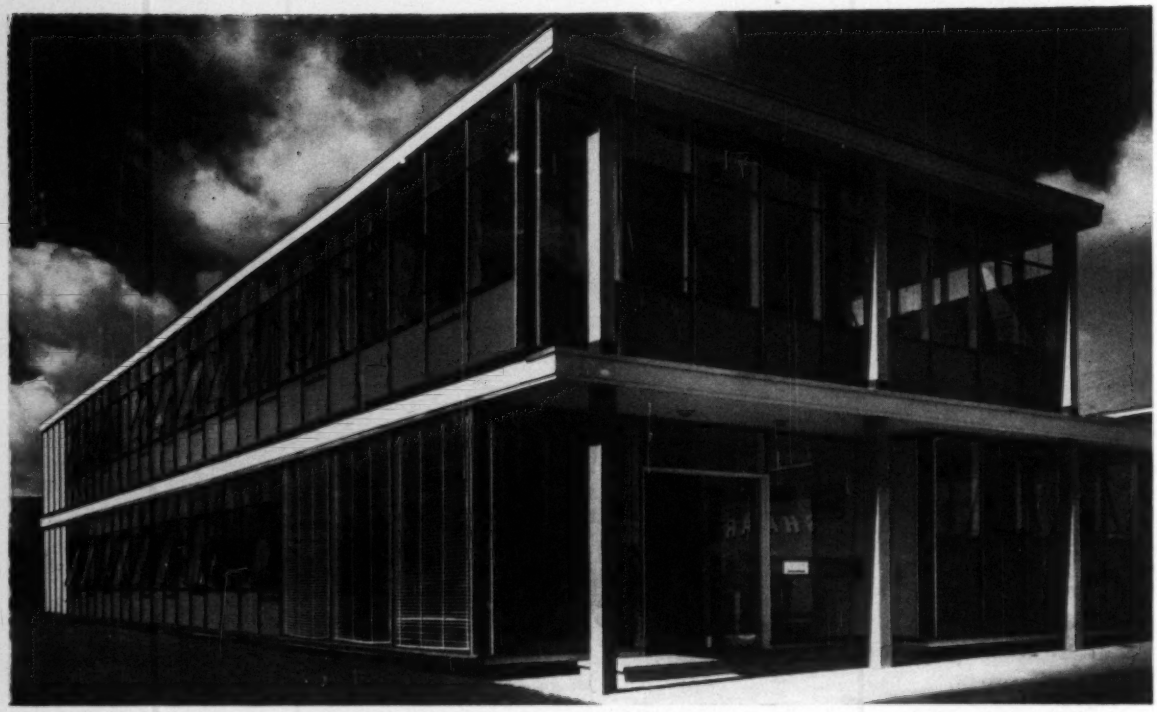
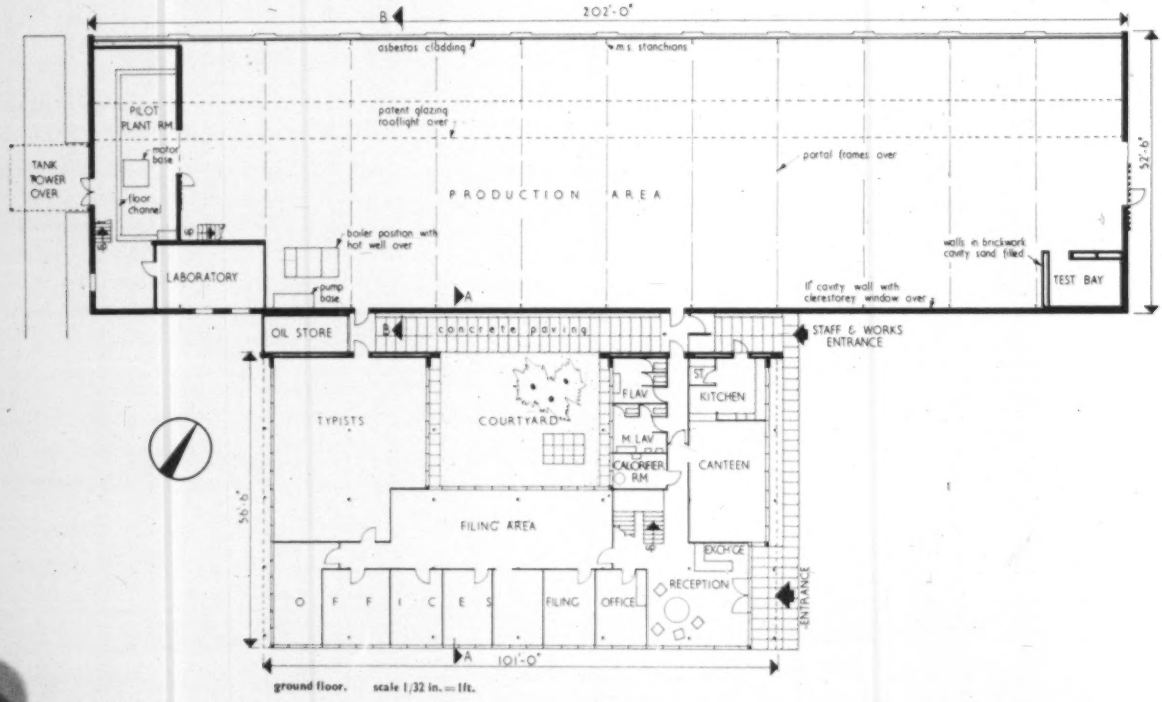


8, recessed porch and entrance hall on east end of office block.

FACTORY AT CAMBERLEY, SURREY

ARCHITECT: JOHN BICKERDIKE. ASSISTANT: PETER GOWER

This factory in Doman Road, Camberley, is for Sharples, who making high-speed centrifuges. Offices and production area had to be separate due to planning restrictions and both had to be capable of future extension. The site is a trading estate: offices and factory are joined by two single-storey wings framing an internal courtyard. The factory construction is steel portal frames and 11 in. and 13½ in. cavity brickwork (stockbrick facings), with a roof of aluminium decking. The office block has directors' and secretaries' rooms and the drawing office on the first floor to be as quiet as possible; the steel frame has walls offset from columns with cantilevered double cross-channels carrying precast concrete floor and roof beams. This has saved an additional row of stanchions and allows them to be placed half-a-module off the grid to avoid interference with cladding or partitioning. The edge steel channels contain a timber curtain wall designed by the architects on a 40 in. grid; solid spandrel panels are light blue.



ground floor. scale 1/32 in. = 1ft.

CRITICISM

CHANDIGARH AND THE SENSE OF PLACE

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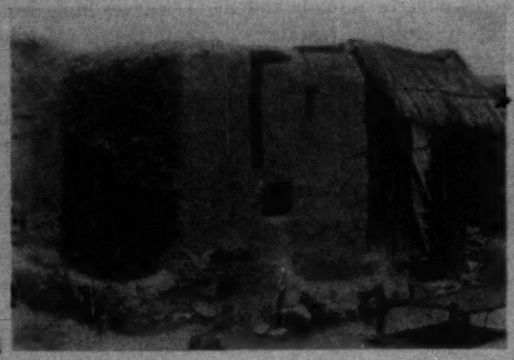
wedged between fins before a plate glass court room; two barristers, immaculate in black, discuss a brief spreading their papers across its shelf depth; a Tamil labourer, near naked, leans to it resting his elbows there.

Entering the chasm which breaks this close-knit pattern pierced fins soar full height, develop in intersection the bold roof sag far above. In expanding to this spatial freedom the eye discovers at once the total relationship between parts; they pivot their bulk about the ramp ahead — blank and forceful balustrade diagonals rising across a spine cut with amoebic holes of sky and further building to a triple vaulted and intense blue. Following this movement slowly, almost majestically, through the full height, the space, building, sky and landscape are gathered in a series of controlled impressions: diagonal facets of confined blue, crisp frames and fins, slithers of sunlight roughening an expanse of concrete, gouged holes and slots revealing the plastic strength of solid structure, panels of startling colour, the brilliance of foothills and plane arched over by roof darkness.



1

The life of the building—robed judges, half-naked children, awe-struck peasants, clerks, labourers—passes ascending and descending, moving through varying levels, walking diminutive across the birds-eye court below, disappearing through half-seen openings. A brief halt focuses the gaze on two Punjabis far below where a blue pool splinters a shaft of sunlight, they squat at the foot of a main fin beneath a recess of scarlet entirely oblivious of their surroundings yet completely 'at home'; their gesticulations weave a black-armed pattern against smooth concrete and their foreshortened heads bob with inaudible argument. Finally from the top terrace—under the very tent billow of shell concrete where the air shifts lazily but welcome, where pigeons perch against chrome yellow—away in a glare of earth brown chiselled sunlight and shadow lies the village.

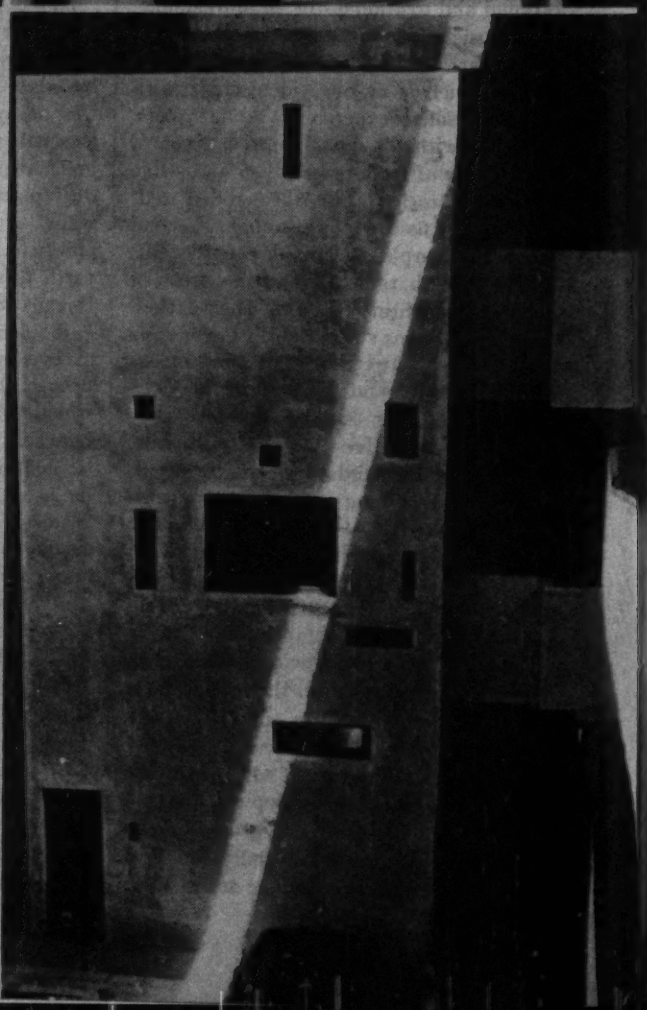
2

3

Michael Blee

1 to 3, the mud village which lies a few hundred yards to the North of the High Court and Secretariat at Chandigarh. This village nucleus establishes the 'sense of place' which was Le Corbusier's 'point de départ' for the new capital city. In the accompanying article, Michael Blee suggests that somewhere in the overall planning of Chandigarh, the 'sense of place' has been lost, though in the great public buildings (particularly in such details of the High Court building, as are shown in 4-7) have successfully achieved a community of feeling between the Indian vernacular and Le Corbusier's very sophisticated genius.

4



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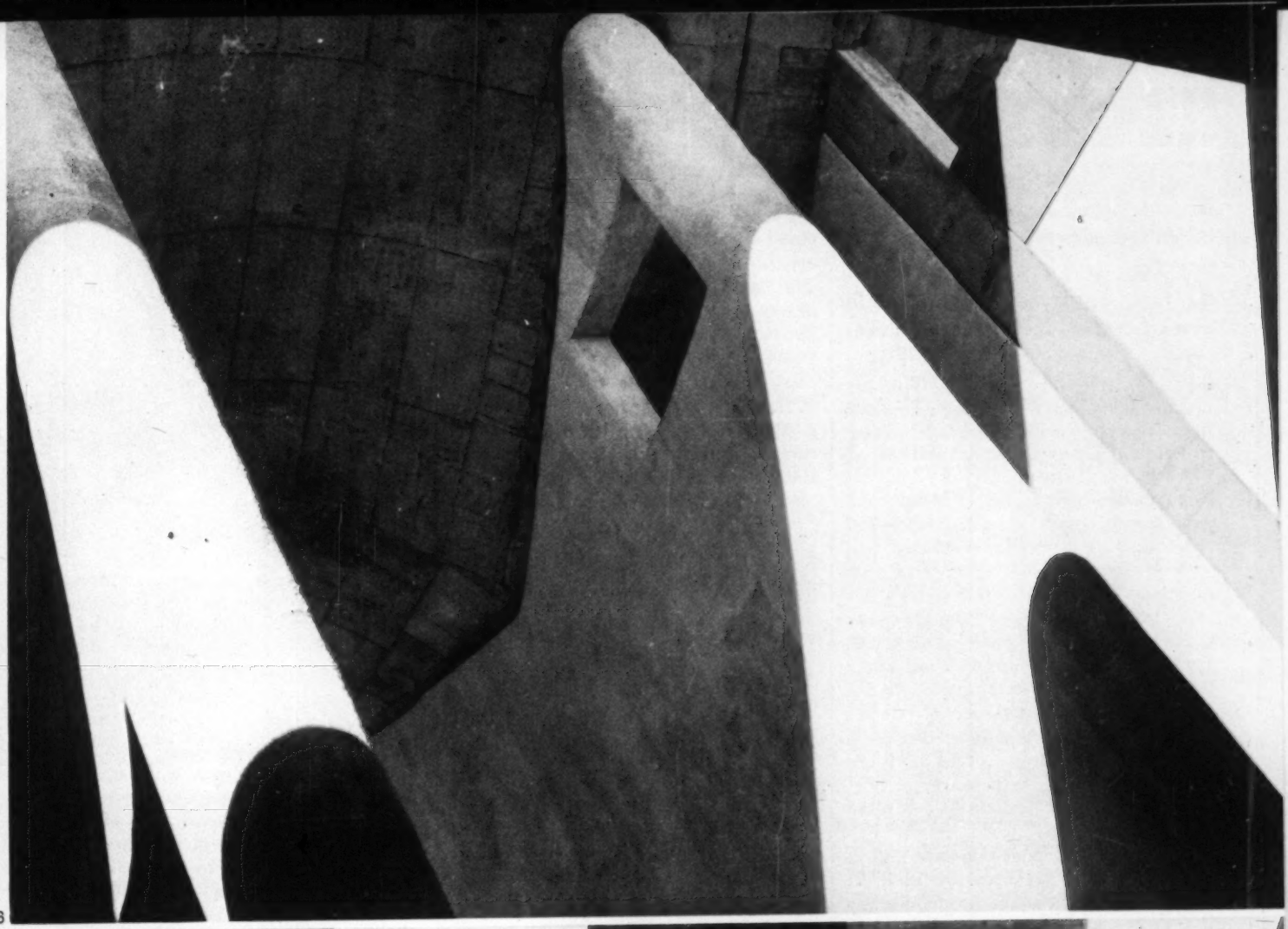

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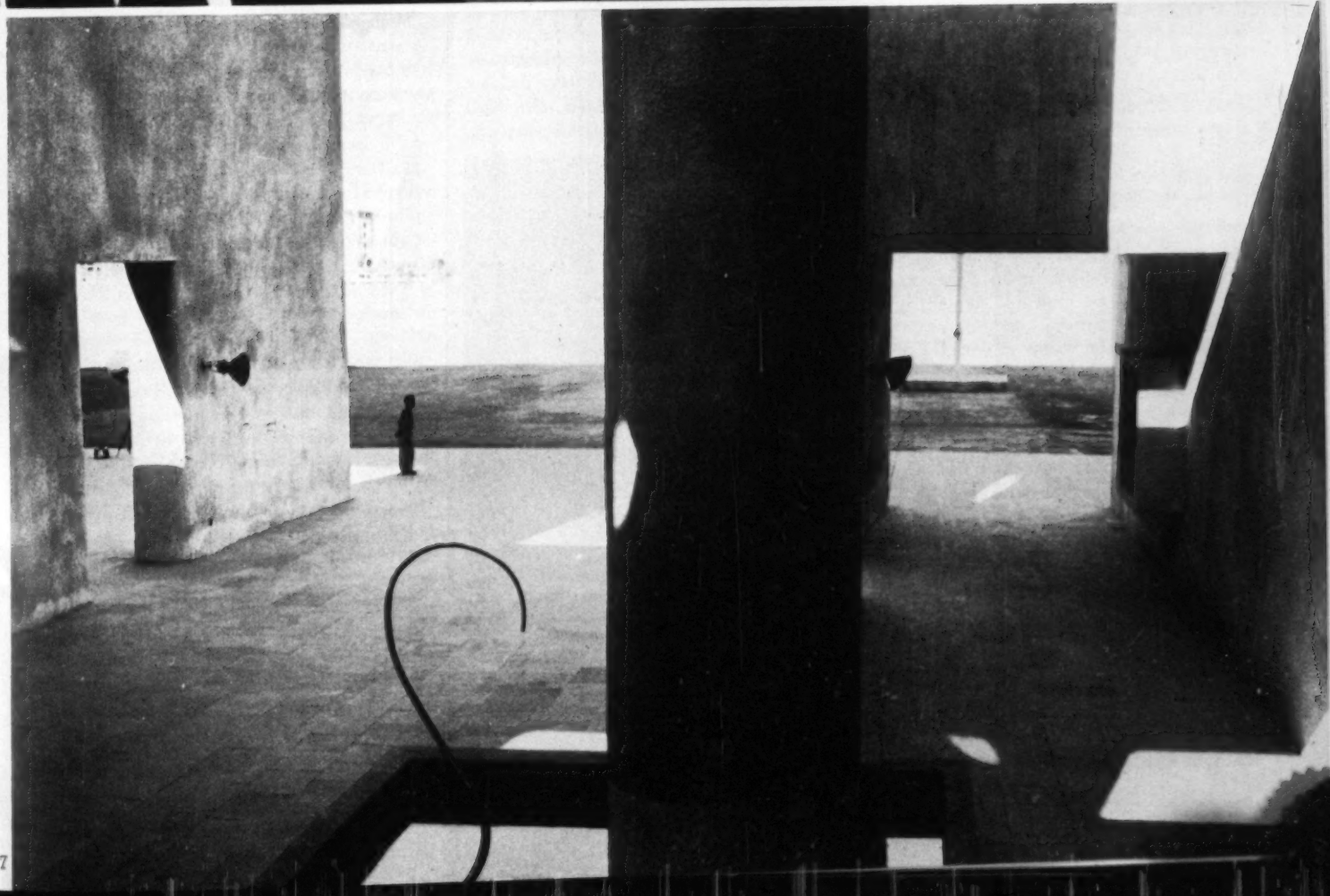

7

EXHIBITIONS

PAINTING

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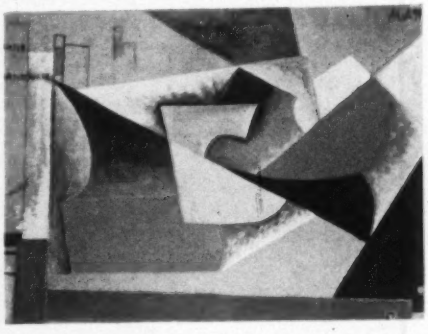
The best cubist exhibition ever held in this country was organized by E. L. T. Mesens and put on at the London Gallery in 1947, and I recall that it was very poorly attended. But it became obvious enough when the public hurried through the cubist room at Braque's retrospective in 1956 that cubism had not gathered any more adherents in the intervening years. This is not surprising. There was never any possibility that the public would begin to see people in a cubistic way, because the cubists themselves never saw the world cubistically: they were not adding anything to our knowledge of appearances but producing unforeseeable structures by engineering unnatural mergers between mutually exclusive views of things. Cubist form is all aberration and anomaly, and it's no accident that the greatest of the cubists excels even Goya in the creation of monsters.

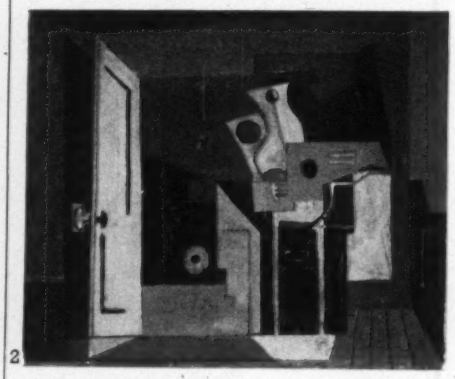
When cubism is less than monstrous, and tries to look like a classical revival or the natural consequences of the art of Cézcanne it is stiff, dull and academic, so it was, in a fashion, adventurous of Gimpel Fils to arrange their recent exhibition of some of the minor artists whose timidities constituted the cubist 'movement' and of some others who had their angular moments without committing themselves to cubism.

In the decorative still lifes by Severini, Lhote, Ferat, Herbin, Hayden, Valmier, etc., the mild applications of cubist dislocation to common objects now look like very faded camouflage, and quite fail to disguise a total banality of vision. In the early landscapes by Dufy and Delaunay and a much later one by Christopher Wood, cubist rigidities are used to stiffen up conventional essays in post-impressionism, and in Wyndham Lewis's 1918 war drawing they are used, with the 'expressive' insensitiveness so typical of this overpraised artist, to make the gunners look as metallic as their howitzer. Diego Rivera's 'L'Homme a la Moustache' is a weak and unimaginative attempt to create a cubist personage in the manner of Picasso. But two works were, for different reasons, outstanding. One of them was a composi-



1

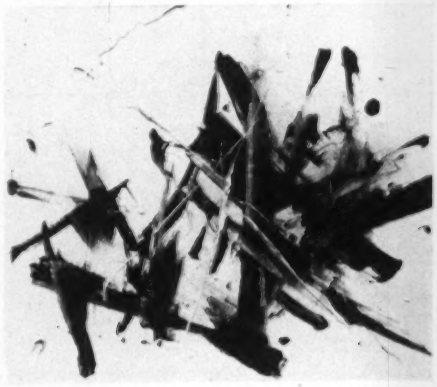
tion by Larianov, 1, which would look very limp indeed beside any cubist collage by Braque or Picasso: it is the date, 1908, inscribed in the top left-hand corner, that I found riveting, for I would have taken its look of being composed of cut papers as a sign of the influence of cubist collages if the first of them had not appeared until four years later. The other outstanding exhibit was 'L'Escalier' by



2

Louis Marcoussis, 2. It is not exactly a masterpiece, but it at least conveys some sense of mystery. It was painted several years after the cubist movement died, and suggests that Marcoussis acquired some inkling of where to look for the heirs of Picasso's cubist personages, for the door opening on to darkness, and the still life arrangement on the landing, which is on the verge of turning into a vaguely bird-like personage, disclose the influence of surrealism.

I don't quite know what to make of Judit Reigl's paintings. They have been on exhibition at the recently opened Drian Gallery at 7 Porchester Place, Marble Arch, and are all variations on the configuration



3

reproduced here, 3. They are painted with assurance and verve, and the catalogue note says that 'they manifest an urgency to transmute the crudest material into an astonishingly new space-world.' This sounds like an exaggeration, but probably doesn't go far enough, for I think that Reigl's work is a cut above the run of 'outer space' abstractions, and may even be an attempt to express a religious experience: there are curious hints of both compassion and ecstasy in the impression, persistently conveyed by her paintings, that some torn and broken thing is involved in some kind of ascension.

Michael Andrews, whose painting called 'A man who suddenly fell over' aroused much comment when it was exhibited at the ICA in 1952, has been holding his first one-man show at the Beaux Arts. He would seem to be a very deliberate worker for although the exhibition covers a period of seven years it contains only twelve paintings and three drawings. The painting of the man who suddenly fell over doesn't look quite as catastrophic as it did in 1952, but it remains one of the boldest and most intransigent contributions to post-war realism. His later paintings are more subtle and complex, but they have the look of being works in progress, full of exciting possibilities, but not yet resolved. One of the most interesting of them, dated 1956–7, is called 'Liony Piony' and depicts a naked human figure of doubtful sex on friendly terms with a lion. The tawny colours are beautiful, and the lion is well conceived, but the composition as a whole is a rather implausible essay in montage, for one isn't in the least convinced that the lion is aware of the presence of the human figure. The painting which I thought most thoroughly worked out, in spite of looking unfinished, is his portrait of the young avant-garde film director Lorenza Mazzetti, 4. It is a strikingly faithful likeness, and has a slightly

4

phantasmal air which accords well with his subject's rather enigmatic personality.

Robert Melville

TOWNSCAPE

ESCAPED LIONS

One of the more subtle pleasures of living in towns comes from their contrast with the country; most of the displeasure of living in big cities lies in the absence of contrast. This may sound like a paradox when it is remembered that towns and cities were built as refuges from the wide open spaces. One would think, therefore, that the happiness of citizens would grow in proportion to the distance away unfriendly Nature was pushed. But contrast, to be appreciated, must first be perceived and in such a way as to set up mental reverberations by the display of what Gordon Cullen has called an extra dimension (AR May, 1954), the intrusion of another language.

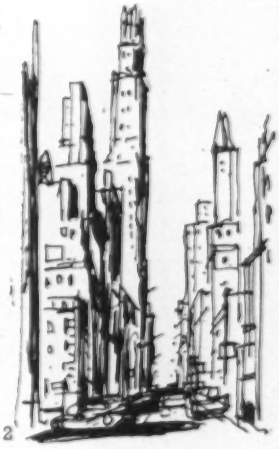
This other language is the result of correspondences between opposites and in the case of town and country sends us back to first principles—the artificial object in a natural setting (exemplified by Barbara Hepworth's sculpture, a lighthouse, a Scottish castle—AR May, June, 1954) and its converse—the natural object in the man-made setting. Each situation produces its own particular sensations caused by the tensions set up between object and setting and their effect on the spectator—a phenomenon well-known to artists. Because it has a bearing on human comfort and because towns are built for human comfort it is a phenomenon that could with advantage be studied by town builders.

Towns are extreme cases of man-made objects in natural settings. Madrid, for example, which from a distance appears as a crystalline mirage in the desert, becomes on closer inspection a modern city out of a glossy magazine—a polished artefact set down in an empty, arid, boulder-strewn landscape. The contrast thus engendered gives the city the same emotional attraction as a lit cottage window in a winter twilight. Once inside the city gates we feel safe and civilized; inside the cottage the curtains are drawn against the elements. But since human comfort at its most exquisite depends on a hint of discomfort we occasionally go to the window and peer through the curtains, listening to the rain in the gutters, the wind in the branches. Already snug indoors, we feel twice as snug after watching for a moment the manifestations of discomfort outside.

The virtue of small country towns is that these manifestations are readily visible. In the very act of experiencing urban amenities from smooth pavements, among bustling shops, there is a glimpse of a different life beyond the town walls, 1 (High St., Bridport). The poet Laurie Lee, referring to Siena, described the essence of it when he said in a radio talk: 'The shepherd on the hill was visible from the market square.'

Should this bucolic sight prove too disturbing the well planned town provides a close pattern of narrow streets to turn into. The great outdoors is shut off as protecting buildings close about you. The change from disclosure to enclosure is a positive sensation rarely possible to the same degree in big cities. But this argument in favour of small, compact urban towns, though valid, does nothing to counteract the claustrophobic tendencies of big towns; some other remedy must be found.

Jean-Paul Sartre might prescribe the grid-iron plan of American cities. The long straight avenues that run right across town are open at either end to the desert; the prairie winds can blow unimpeded; a means of escape from the brick and cement defiles is implied, 2 (drawing of New York street by Hugh Casson), which is lacking in the closeknit web of Paris or London. There are moments, of course, in any city when we can feel the impact of the wilds; the nature of things is made poetically manifest in London when on an autumn afternoon the scream of a million starlings will drown the roar of rush hour traffic, a few brittle plane leaves scatter the pavement and a window in Whitehall flashes a dull pink reflection of the sun about to set away beyond the Metropolitan Green Belt. These are transitory effects, however, though none-the-less valuable for that. They accentuate the essentially urban values and enrich the moment when bar doors will open, lights go on and theatre queues begin to assemble. But this odd poetry in unexpected places



2

1

PAINTING

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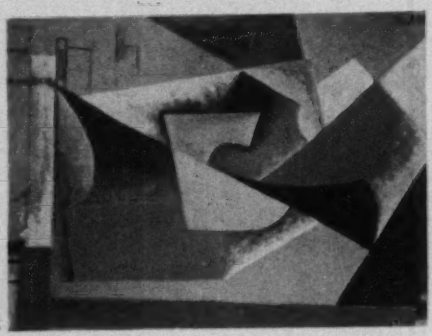
The best cubist exhibition ever held in this country was organized by E. L. T. Mesens and put on at the London Gallery in 1947, and I recall that it was very poorly attended. But it became obvious enough when the public hurried through the cubist room at Braque's retrospective in 1956 that cubism had not gathered any more adherents in the intervening years. This is not surprising. There was never any possibility that the public would begin to see people in a cubistic way, because the cubists themselves never saw the world cubistically: they were not adding anything to our knowledge of appearances but producing unforeseeable structures by engineering unnatural mergers between mutually exclusive views of things. Cubist form is all aberration and anomaly, and it's no accident that the greatest of the cubists excels even Goya in the creation of monsters.

When cubism is less than monstrous, and tries to look like a classical revival or the natural consequences of the art of Cézcanne it is stiff, dull and academic, so it was, in a fashion, adventurous of Gimpel Fils to arrange their recent exhibition of some of the minor artists whose timidities constituted the cubist 'movement' and of some others who had their angular moments without committing themselves to cubism.

In the decorative still lifes by Severini, Lhote, Ferat, Herbin, Hayden, Valmier, etc., the mild applications of cubist dislocation to common objects now look like very faded camouflage, and quite fail to disguise a total banality of vision. In the early landscapes by Dufy and Delaunay and a much later one by Christopher Wood, cubist rigidities are used to stiffen up conventional essays in post-impressionism, and in Wyndham Lewis's 1918 war drawing they are used, with the 'expressive' insensitiveness so typical of this overpraised artist, to make the gunners look as metallic as their howitzer. Diego Rivera's 'L'Homme a la Moustache' is a weak and unimaginative attempt to create a cubist personage in the manner of Picasso. But two works were, for different reasons, outstanding. One of them was a composi-



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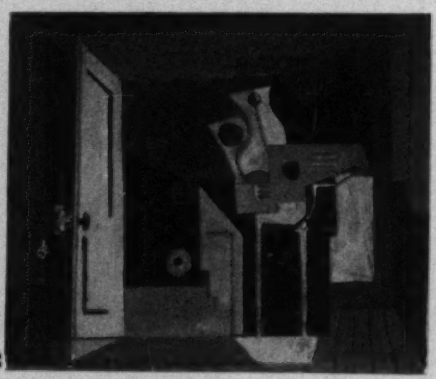
tion by Larianov, 1, which would look very limp indeed beside any cubist collage by Braque or Picasso: it is the date, 1908, inscribed in the top left-hand corner, that I found riveting, for I would have taken its look of being composed of cut papers as a sign of the influence of cubist collages if the first of them had not appeared until four years later. The other outstanding exhibit was 'L'Escalier' by



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Louis Marcoussis, 2. It is not exactly a masterpiece, but it at least conveys some sense of mystery. It was painted several years after the cubist movement died, and suggests that Marcoussis acquired some inkling of where to look for the heirs of Picasso's cubist personages, for the door opening on to darkness, and the still life arrangement on the landing, which is on the verge of turning into a vaguely bird-like personage, disclose the influence of surrealism.

I don't quite know what to make of Judit Reigl's paintings. They have been on exhibition at the recently opened Drian Gallery at 7 Porchester Place, Marble Arch, and are all variations on the configuration

3

reproduced here, 3. They are painted with assurance and verve, and the catalogue note says that 'they manifest an urgency to transmute the crudest material into an astonishingly new space-world.' This sounds like an exaggeration, but probably doesn't go far enough, for I think that Reigl's work is a cut above the run of 'outer space' abstractions, and may even be an attempt to express a religious experience: there are curious hints of both compassion and ecstasy in the impression, persistently conveyed by her paintings, that some torn and broken thing is involved in some kind of ascension.

Michael Andrews, whose painting called 'A man who suddenly fell over' aroused much comment when it was exhibited at the ICA in 1952, has been holding his first one-man show at the Beaux Arts. He would seem to be a very deliberate worker for although the exhibition covers a period of seven years it contains only twelve paintings and three drawings. The painting of the man who suddenly fell over doesn't look quite as catastrophic as it did in 1952, but it remains one of the boldest and most intransigent contributions to post-war realism. His later paintings are more subtle and complex, but they have the look of being works in progress, full of exciting possibilities, but not yet resolved. One of the most interesting of them, dated 1956–7, is called 'Liony Piony' and depicts a naked human figure of doubtful sex on friendly terms with a lion. The tawny colours are beautiful, and the lion is well conceived, but the composition as a whole is a rather implausible essay in montage, for one isn't in the least convinced that the lion is aware of the presence of the human figure. The painting which I thought most thoroughly worked out, in spite of looking unfinished, is his portrait of the young avant-garde film director Lorenza Mazzetti, 4. It is a strikingly faithful likeness, and has a slightly

4

phantasmal air which accords well with his subject's rather enigmatic personality.

Robert Melville

TOWNSCAPE

ESCAPED LIONS

One of the more subtle pleasures of living in towns comes from their contrast with the country; most of the displeasure of living in big cities lies in the absence of contrast. This may sound like a paradox when it is remembered that towns and cities were built as refuges from the wide open spaces. One would think, therefore, that the happiness of citizens would grow in proportion to the distance away unfriendly Nature was pushed. But contrast, to be appreciated, must first be perceived and in such a way as to set up mental reverberations by the display of what Gordon Cullen has called an extra dimension (AR May, 1954), the intrusion of another language.

This other language is the result of correspondences between opposites and in the case of town and country sends us back to first principles—the artificial object in a natural setting (exemplified by Barbara Hepworth's sculpture, a lighthouse, a Scottish castle—AR May, June, 1954) and its converse—the natural object in the man-made setting. Each situation produces its own particular sensations caused by the tensions set up between object and setting and their effect on the spectator—a phenomenon well-known to artists. Because it has a bearing on human comfort and because towns are built for human comfort it is a phenomenon that could with advantage be studied by town builders.

Towns are extreme cases of man-made objects in natural settings. Madrid, for example, which from a distance appears as a crystalline mirage in the desert, becomes on closer inspection a modern city out of a glossy magazine—a polished artefact set down in an empty, arid, boulder-strewn landscape. The contrast thus engendered gives the city the same emotional attraction as a lit cottage window in a winter twilight. Once inside the city gates we feel safe and civilized; inside the cottage the curtains are drawn against the elements. But since human comfort at its most exquisite depends on a hint of discomfort we occasionally go to the window and peer through the curtains, listening to the rain in the gutters, the wind in the branches. Already snug indoors, we feel twice as snug after watching for a moment the manifestations of discomfort outside.

The virtue of small country towns is that these manifestations are readily visible. In the very act of experiencing urban amenities from smooth pavements, among bustling shops, there is a glimpse of a different life beyond the town walls, 1 (High St., Bridport). The poet Laurie Lee, referring to Siena, described the essence of it when he said in a radio talk: 'The shepherd on the hill was visible from the market square.'

Should this bucolic sight prove too disturbing the well planned town provides a close pattern of narrow streets to turn into. The great outdoors is shut off as protecting buildings close about you. The change from disclosure to enclosure is a positive sensation rarely possible to the same degree in big cities. But this argument in favour of small, compact urban towns, though valid, does nothing to counteract the claustrophobic tendencies of big towns; some other remedy must be found.

Jean-Paul Sartre might prescribe the grid-iron plan of American cities. The long straight avenues that run right across town are open at either end to the desert; the prairie winds can blow unimpeded; a means of escape from the brick and cement defiles is implied, 2 (drawing of New York street by Hugh Casson), which is lacking in the closeknit web of Paris or London. There are moments, of course, in any city when we can feel the impact of the wilds; the nature of things is made poetically manifest in London when on an autumn afternoon the scream of a million starlings will drown the roar of rush hour traffic, a few brittle plane leaves scatter the pavement and a window in Whitehall flashes a dull pink reflection of the sun about to set away beyond the Metropolitan Green Belt. These are transitory effects, however, though none-the-less valuable for that. They accentuate the essentially urban values and enrich the moment when bar doors will open, lights go on and theatre queues begin to assemble. But this odd poetry in unexpected places

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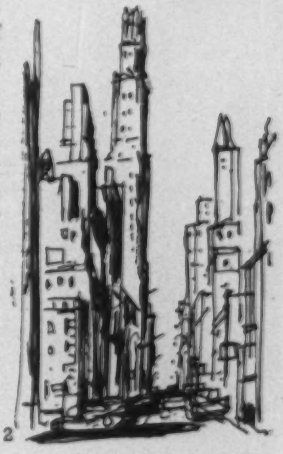

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is none of the town designer's doing.

Human need for some natural contrast to city sophistications is evident in the horticultural activities of individuals in back gardens and window boxes, in potted plants and caged birds, and in their corporate efforts—the municipal park and the zoo. The park has its uses, but being as artificial in conception as the big city itself, it is no solution. What is needed is a hint of raw nature, not a demonstration of how nature can be tamed and exhibited. The monkey on the barrel organ does not immediately suggest the jungle; it needs an escaped lion in the streets for that and among the elements of big cityscape there should be a series of escaped lions—natural objects as visual shocks in a man-made setting just to remind us of the nature of things.

In the right geographical setting you can have a mountain in the main street—a lion in your lap so to speak—as at Granada (Spain, not Tooting). But care is needed where geography is less overpowering—as in Bloomsbury where a badly placed building could shut out Highgate Hill.

When the real thing is not visible, cobbled streets and rough textured floors have other justifications besides function or visual pattern; they are reminders of primitive lanes in distant villages.

In Bristol, with ships at the end of streets, 3 (19th century photograph, this area is now a traffic roundabout), the high seas are brought right into town, whilst the Avon at low tide reveals grey mud as primeval as you could wish for.

The most frequent and obvious natural objects found in cities are trees, which behind iron railings are clearly tame and safe. Those in Brunswick Square, Hove, 4, however, belong to a country walk and strike the right bizarre note against sophisticated buildings. And whereas, *the* tree in Oxford High Street is a piece of wild in the act of escaping, the one in Rome, 5, is obviously on the run.

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But of all devices, bare earth is perhaps the simplest. Since the city is usually thought of as a natural habitat rather than a carefully contrived environment one tends to think of the London floor as yards thick. Yet a pavement up in Whitehall with a glimpse of bare earth only a few inches below smooth paving slabs—heightened in contrast because of the setting—serves to jolt us into the right relationship with our surroundings. It is a chance to peep between the curtains and then to withdraw again, snug and protected.

All this would not be worth mentioning if nothing could be done about it. Unfortunately those who could do something are either unaware of the precise nature of the need or too busy drawing the curtains, buttoning up, covering and embroidering so that every patch of raw nature is sooner or later, at great cost to the ratepayer, transformed in the name of 'improvement.' What should be snug becomes stuffy and a minor manifestation of subtopia.

One feels that these things are managed better abroad. Odd pieces of common

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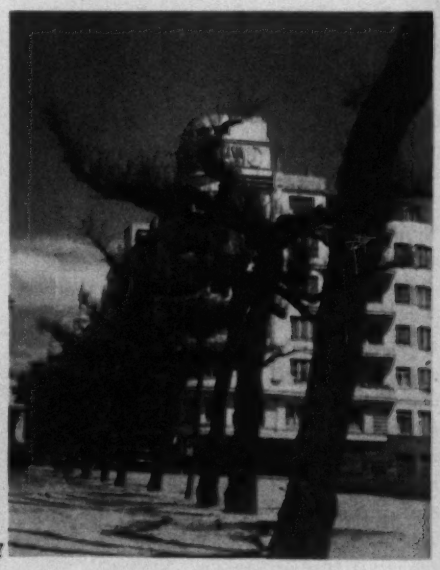
ground, pocket handkerchiefs of ground, 6, are left like that; no tarmac claims them for urbanity. Outside suave buildings, 7, the footpath is often no more than compressed earth. Although this sometimes



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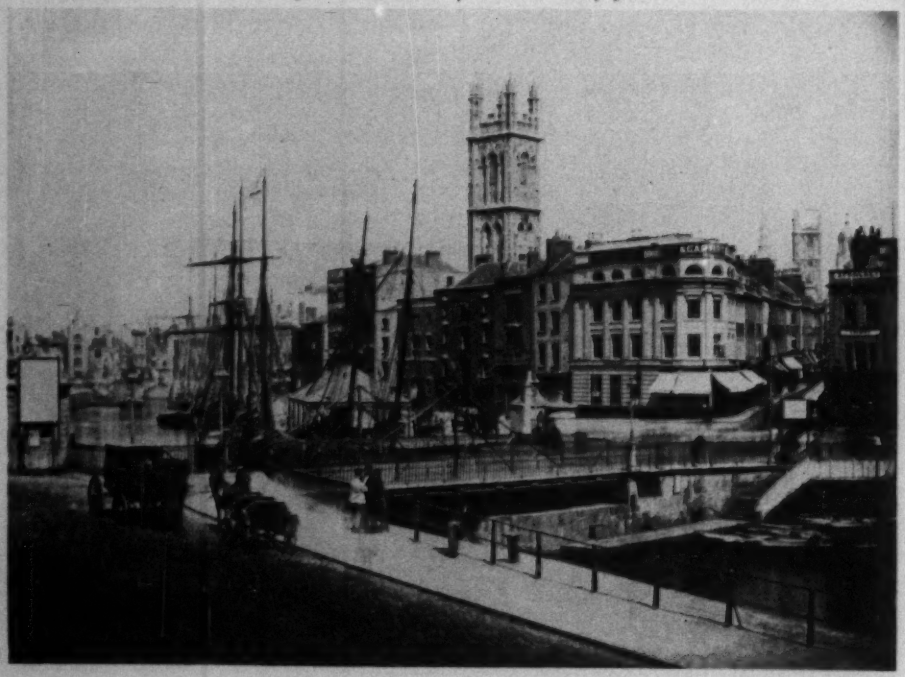
gives to the place a temporary, almost camp-like air, suggesting that the town builders are amateurs with no will to finish the job properly, further contemplation prompts the conclusion that they know what they are about. As in all art, the skill lies in knowing where to stop.

Raymond Spurrier



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IDEAL INTERIORS

Traditionally, and in terms of the bulk of its exhibits every year, the Daily Mail's *'Ideal Home' exhibition is a great festival of entrenched, middle-of-the-road popular taste.* Nevertheless, it has a good record for employing leading progressive designers on projects that are far from the middle of the road, as in the case of the House of the Future by Alison and Peter Smithson, and this year's show, which opens on March 4, has a special exhibit of interiors by five designers of name, though not all of them architects.

One of them, Cecil Beaton, has produced an *Edwardian Bedroom* in 'le Style Rothschild' and various tones of red, 1,

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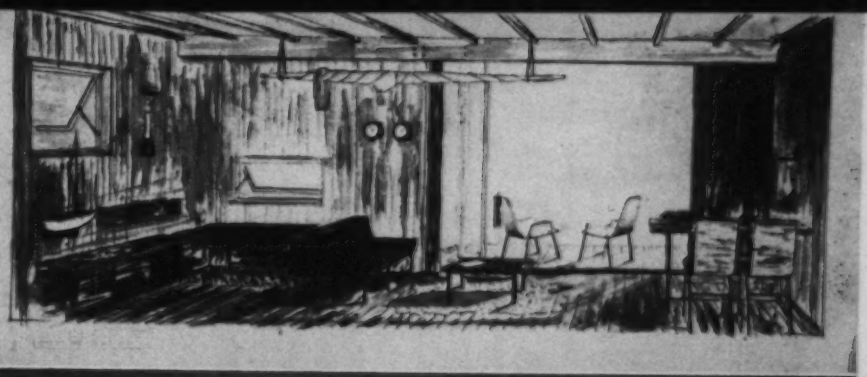
that probably stands fairly close to the popular conception of an acceptable luxury decor—but it may be an outgoing conception, for at least two of the other four schemes will be accepted (in so far as they *are* accepted) as representatives of a kind of modern luxury that has been made familiar through mass-communication media, and in particular the more sophisticated type of Hollywood film. Jo Pattrick's *Beach House*, 2, comes within this category, though one imagines that in her own mind something like the Functional Tradition was uppermost, establishing a working congruity between furled sails, exposed planking, Swedish windows, brass equipment and contemporary garden furniture. With Robin Day's *Executive Office*, 3, a public double-take with *Executive Suite* seems certain, though this particular style exists in reality in England, and largely thanks to the furniture designed by Mr. Day himself.

The other two interiors both transcend current popular acceptances, and yet both make sophisticated cross-references to what is acceptable. Sir Hugh Casson's womb-like *Room for Hi-Fi Listening* with its almost windowless interior, its avoidance of sharp corners and its vast reclining-



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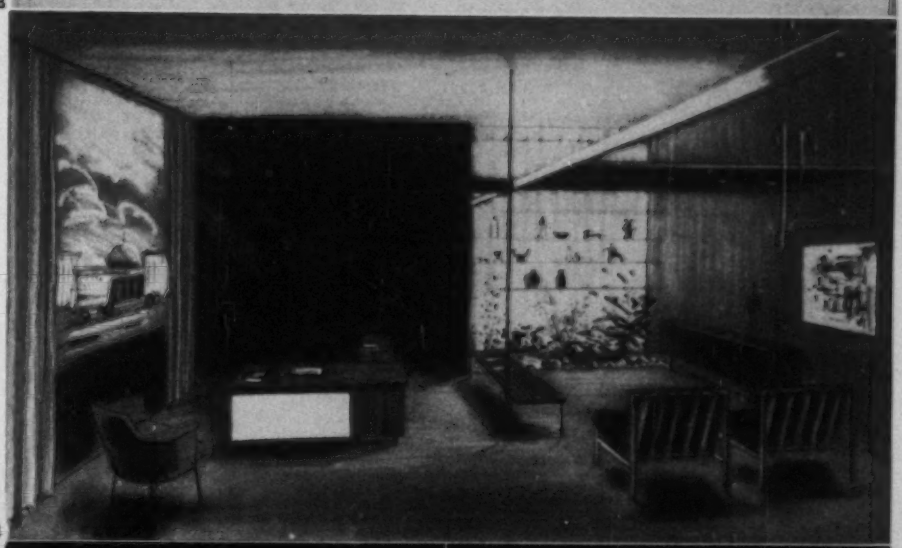

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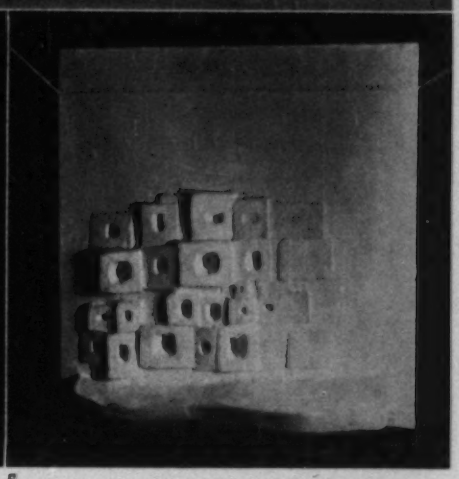

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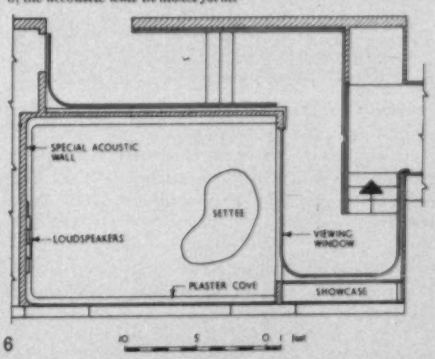
2, Beach House, *designed by Mrs. Jo Pattrick.*
3, *Robin Day's* Executive Office *with two zones, one for work and the other for relaxed discussion.*
4, *suspended Hi-Fi equipment in the room by Sir Hugh Casson.*
5, *the accoustic wall in model form.*



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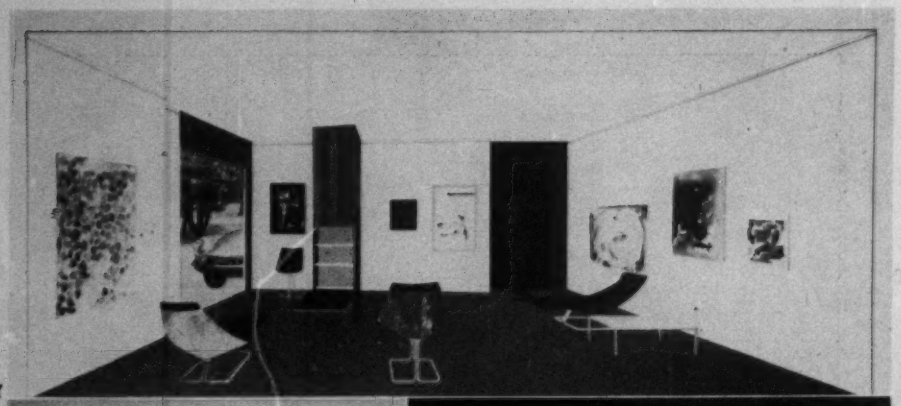
couch, has clear affinities with the underlying psychology of Beaton's Edwardian fantasy, though it runs right against popular taste in its manner of destroying the piece of furniture identified as *radiogram*, and distributing its parts between a showcase by the entrance stair, where the electronic parts will glow with their own radiances, 4, and an acoustic wall, seen in model form in 5, of speakers at the end of the room itself (see plan, 6). Richard Hamilton's *Gallery for a Collector* of Brutalist and Tachiste art, 7, is a simpler conception based on the idea of leaving clear as much wall-space as possible for the pictures and sculpture. To this end all the technical aids considered proper to a cultured man of the mid-fifties, from cocktails to tape-recorder, have been housed in a single mobile fitment seen against the back wall. The only other furniture in the room will be an occasional table, and four chairs—which return us to the question of public acceptance, for these



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7, 'Gallery for a collector' by Richard Hamilton.
8, 9, chairs designed by Harley Earl.

particular pieces, 8, are the work of that great fashion-maker Harley Earl, chief stylist of General Motors, and would not have been known to the designer of this room had they not been published in the popular magazine *Look*, which gave the *chaise-longue* version, 9, the full pop-art treatment. **P.R.B.**

COUNTER-ATTACK

52. King's Lynn, Norfolk. (*Borough Council*). The fishing cottages around St. Nicholas Church at the north end of the Tuesday Market are threatened by slum clearance and replacement by a new service road for Alexandra Dock. Clearance may be necessary, but only for replacement to the same intimate pattern—especially as this is a social unit as well as an aesthetic one and wouldn't survive 're-location'—i.e. dumping on an estate miles from the town and the docks. New roads should loop round the town and come in from the east, not add to the difficulties of a centre already stretched to its limit by ordinary market-town traffic.

53. Chichester, Sussex. (*City Planning Committee*). Keeping-in-keeping has reached absurd proportions in many of the cathedral cities, and there are already several streets where there are more respectfully fake Georgian buildings than there are genuine ones—this view of East Street, Chichester, is an example, 1. This attitude will only lead to emasculated streets and the devaluation of the original buildings, just as fake half-timber has made appreciation of the genuine stuff much more difficult. What East Street now needs is a bit of curtain walling or an exposed concrete frame, controlled by something much subtler than cornice lines and fairfaced brickwork, conditions

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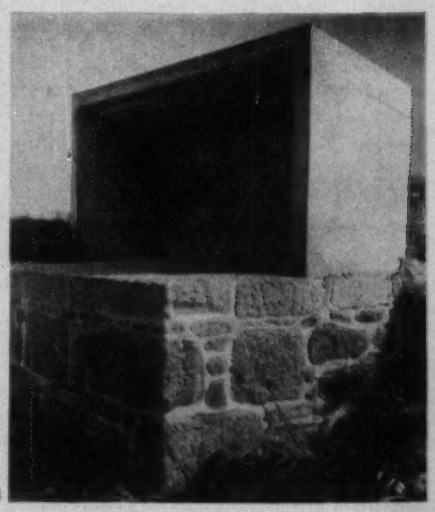
which would vary for every street and which might be a colour-equation or a solid-void ratio or a rhythm of verticals: Chichester never got to its present beauty by being mealy-mouthed. Much of the trouble may be due to architects themselves and a conscientious planning officer may have to fight two battles: one to prevent his committee insisting on Neo-Georgian and another to prevent architects submitting Neo-Georgian designs.

54. Shaftesbury, Dorset. (*Borough Council*). Shaftesbury has a splendid situation on a ridge-top with a 300-ft. drop both east and west. The culmination of this is Park Walk which runs from the town proper to the very tip of the ridge. It used to have big trees along it; these were felled two years ago after considerable dispute and conflicting evidence (the remaining stumps certainly look sound enough). However, that is spilt milk, and the problem is what to do now: at the moment the walk is an arid jangling mixture of stumps and asphalt, 2. The only course is surely to plant more big-scale trees and replace the asphalt with gravel and turf. This could be made into one of the most impressive walks in England: the council have only themselves to blame if they fail to make the best use of it.

2

55. West Wickham (*Residents Association and Borough Council*). The council want to fill in the White Hart pond at West Wickham as a nuisance—'West Wickham is a growing area and is no place for a village pond.' The pond, though neglected, is the most pleasant part of West Wickham and still forms a complete group with pub, trees and meadows; with intelligent landscaping it could become a sophisticated suburban pond. There is definitely a place for the pond (*a*) because West Wickham is a suburb anyway and (*b*) because the rest of the place is a subtopian wilderness.

56. Near Penzance, Cornwall. A churn stand which is completely successful by being entirely simple and up to date; consisting of a stone base and precast concrete top with corrugated iron used for shuttering, another example of the functional tradition in the 1950's. It is a model to anyone who builds in the country—and perhaps most of all to architects, so many of whom might over-design an object like this.



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BOOKS

A NOVEL ANSWER

TRIUMPH OF PEACE: A STUDY OF THE WHITEHALL BANQUETING HOUSE. *By Per Palme. Thames and Hudson.* 70*s.*

Twenty years ago English architecture was, historically speaking, still in its antiquarian cradle: since the war it has been through the school of art-historical scholarship, and now it has graduated into the academic world of theses and post-graduate research. Mr. Palme's book was prepared as a thesis for a degree at Uppsala University, but it was written in London and it has now been published in an English edition. It represents what for this country is to some extent a new approach to architectural history. Hitherto the questions—other than purely factual ones—asked by writers on English architecture have been concerned chiefly with the history and analysis of style. Mr. Palme has gone one further. Guided by his supervisor, Professor Paulsson, he has attempted to define 'the historical situation in which, and for which, the building came into existence,' and 'to reconstruct its functional and evaluative context in its own age.'

This is a method which has, it is true, been applied more than once to English ecclesiastical architecture, notably by Dr. Addleshaw and Mr. Etchells. But in relation to Inigo Jones's Banqueting House it is something new, and the result is exciting. The building ceases to be merely the four walls behind the most famous façade in English classical architecture. It becomes one specifically designed to serve the elaborate diplomatic ceremonial of the time and, in particular, to glorify James I and his dynastic schemes. Mr. Palme convincingly associates the building of the hall with the preparations for the Spanish Match, and explains Rubens's paintings in terms of the political and religious ideas formulated by the king and his courtiers. He shows us how it was used as the setting not only of royal banquets, but also of masques, audiences, and the Office of Healing, better known as Touching for the King's Evil. Seen in this exalted context the Banqueting House attains an historical significance more than merely architectural: it becomes the Temple of the English Solomon, as charged with Stuart ideology as Westminster Abbey is with Plantagenet piety.

But Mr. Palme has not confined his researches to enlarging our understanding of the Banqueting House as a setting for court ceremonial. He has carefully examined its architectural lineage and indicated the sources which may have been in Inigo Jones's mind when he designed this 'inspired amalgam' of a traditional English hall and an ancient basilica as reconstructed by Palladio. In a particularly interesting chapter he demonstrates the existence of a ceremonial niche which was done away with after an existence of less than five years, and discloses the fact that the lower range of windows was either blocked up or covered by tapestries. The provision of two tiers of windows to light a single space has always been a puzzling feature of Jones's design, and if Mr. Palme does not altogether succeed in explaining the inconsistency, he has at least shown that it was one of which the seventeenth century was conscious as well as the twentieth. His own belief that originally some of the windows were open and others closed in such a way as to illuminate the ceremonial pauses in the reception of foreign ambassadors is ingenious, but seems to rest on insufficient evidence.

Apart from this, Mr. Palme proves his points with an exemplary citation of literary and documentary evidence, and the only general criticism which his book invites is indeed that it retains rather too obviously the form of an academic thesis, and that learning borne more lightly might still have given us the whole story in fewer and rather less formidable pages.

Howard Colvin

ALUMINIUM ART AND TECHNICS

ALUMINUM IN MODERN ARCHITECTURE. Vol. I.—BUILDINGS. *By John Peter.* Vol. II.—ENGINEERING DESIGN AND DETAILS. *By Paul Weidlinger. Published in England by Chapman & Hall Ltd.* 80*s. and* 140*s.*

Aluminium and the plastics have, more than any other building material, a kind of glamour derived from a vaguely understood association with an advanced technology. Beyond this glamour, however, there is little factual information or, for that matter, understanding of the unique behaviours of these materials. Reynolds Aluminum, one of the three big American producers, recently commissioned these two volumes in order to remedy this deficiency as far as aluminium is concerned. The books are therefore aimed at architects interested in becoming familiar with one of the more important building materials of our period in order to explore to the utmost the available technological resources.

The first volume records certain architectural achievements in the use of aluminium during the last ten years and beautifully demonstrates the maturity, variety and acceptance which has been achieved in Europe and the Americas during this period. It has as an appendix some informal tape-recorded comments by twenty-six American architects. These are often revealing and occasionally amusing; Mies, for example, quoting Thomas Aquinas: 'Reason is the first principle of all human work' and adding 'I don't want to be interesting . . . I want to be good.'

The second volume—unfortunately, I understand, not available separately from the first—is a 'treatise on architectural engineering, directed to a specific building material: Aluminum' and is largely the work of Paul Weidlinger, who belongs to that small but fortunately increasing number of engineers able to combine brilliance with architectural insight. Quite apart from demonstrating the versatility of the various aluminium alloys and their multitudinous application in design from roofing to flagpoles through thresholds, curtain walls, insulation, ducting . . . it deals with the general problems of the material from its earliest stage as bauxite to its shop fabrication. A great many of the detailed descriptions are of very general interest and the catalogue of fastening devices, for example, many of which are borrowed from the aircraft industry, will surprise most architects.

The greatest drawback to the even wider application of aluminium is undoubtedly its price, which in turn is closely related to the cost of electric power. Only small quantities of aluminium are smelted in this country using the hydro-electric resources of the Highlands. Should the Volta River project go ahead, however, the existence of bauxite mines, a dam, a smelter and a port in Ghana, all in close relation to each other, may affect the price of aluminium within the sterling area. We may then come nearer to the economic arguments in favour of aluminium put forward in this publication.

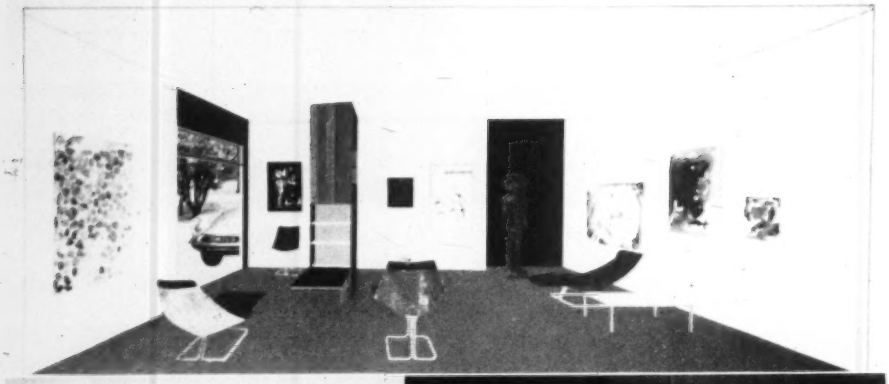
The visual implications of the use of aluminium are related to this cost factor. More than in the case of steel, it is economic to spend a larger proportion of the total cost on labour and to design the more intricate spidery structures which use the material to its best advantage. Aluminium is also a generally weaker metal than steel, so that members will become correspondingly more bulky. Window mullions, for example, will have a greater cross-sectional area in aluminium than steel. Both these tendencies—spidery complexity and vigorous robustness—are, it would seem, very much in tune with current visual feelings.

Michael Brawne

NINETY YEARS ENGLISH BAROQUE

HISTORY OF ENGLISH ART 1625-1714. *By Margaret Whinney and Oliver Millar. Edited by T. S. R. Boase. Oxford University Press.* 1956. 50*s.*

The Courtauld Institute has made an immeasurable difference to the development of the history of art in this country. The editor of the Oxford History of English Art was its second director. The authors of this its eighth volume are the Reader in the History of Art at the Institute and a former student, one of the best the Institute can boast of. He is now Deputy Surveyor of the Queen's Pictures. The division of material between the two authors is transparent though unrevealed. Their collaboration is ideal, thanks to an identity of approach and a sufficient similarity of style. There is only one bad seam, when Dr. Whinney ends her chapter seven in 1675 and begins her chapter nine with the same year, but Mr. Millar interpolates in chapter eight the whole of major easel painting up to 1720 and beyond, a date Dr. Whinney reaches only in chapter thirteen. In another way, however, one author instead of two would have made a fundamental difference. He would no doubt have allotted space according to aesthetic value and historical significance. On both these scores architecture from Inigo Jones to Vanbrugh and Hawksmoor outstrips painting with, after Rubens and van Dyck, a Lely, a Kneller, a Verrio and even a Thornhill as its highlights. Moreover, in architecture every one of the masters was English, in painting none but



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7, *'Gallery for a collector' by Richard Hamilton.*
8, 9, *chairs designed by Harley Earl.*

particular pieces, 8, are the work of that great fashion-maker Harley Earl, chief stylist of General Motors, and would not have been known to the designer of this room had they not been published in the popular magazine *Look*, which gave the *chaise-longue* version, 9, the full pop-art treatment. **P.R.B.**

COUNTER-ATTACK

52. King's Lynn, Norfolk. (*Borough Council*). The fishing cottages around St. Nicholas Church at the north end of the Tuesday Market are threatened by slum clearance and replacement by a new service road for Alexandra Dock. Clearance may be necessary, but only for replacement to the same intimate pattern—especially as this is a social unit as well as an aesthetic one and wouldn't survive 're-location'—i.e. dumping on an estate miles from the town and the docks. New roads should loop round the town and come in from the east, not add to the difficulties of a centre already stretched to its limit by ordinary market-town traffic.

53. Chichester, Sussex. (*City Planning Committee*). Keeping-in-keeping has reached absurd proportions in many of the cathedral cities, and there are already several streets where there are more respectfully fake Georgian buildings than there are genuine ones—this view of East Street, Chichester, is an example, 1. This attitude will only lead to emasculated streets and the devaluation of the original buildings, just as fake half-timber has made appreciation of the genuine stuff much more difficult. What East Street now needs is a bit of curtain walling or an exposed concrete frame, controlled by something much subtler than cornice lines and fairfaced brickwork, conditions

1

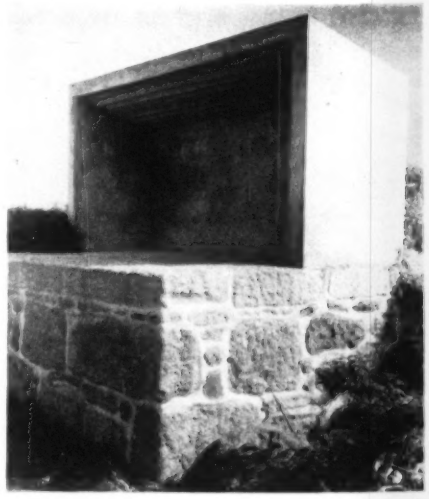
which would vary for every street and which might be a colour-equation or a solid-void ratio or a rhythm of verticals: Chichester never got to its present beauty by being mealy-mouthed. Much of the trouble may be due to architects themselves and a conscientious planning officer may have to fight two battles: one to prevent his committee insisting on Neo-Georgian and another to prevent architects submitting Neo-Georgian designs.

54. Shaftesbury, Dorset. (*Borough Council*). Shaftesbury has a splendid situation on a ridge-top with a 300-ft. drop both east and west. The culmination of this is Park Walk which runs from the town proper to the very tip of the ridge. It used to have big trees along it; these were felled two years ago after considerable dispute and conflicting evidence (the remaining stumps certainly look sound enough). However, that is spilt milk, and the problem is what to do now: at the moment the walk is an arid jangling mixture of stumps and asphalt. 2. The only course is surely to plant more big-scale trees and replace the asphalt with gravel and turf. This could be made into one of the most impressive walks in England: the council have only themselves to blame if they fail to make the best use of it.

2

55. West Wickham (*Residents Association and Borough Council*). The council want to fill in the White Hart pond at West Wickham as a nuisance—'West Wickham is a growing area and is no place for a village pond.' The pond, though neglected, is the most pleasant part of West Wickham and still forms a complete group with pub, trees and meadows; with intelligent landscaping it could become a sophisticated suburban pond. There is definitely a place for the pond (*a*) because West Wickham is a suburb anyway and (*b*) because the rest of the place is a sub-topian wilderness.

56. Near Penzance, Cornwall. A churn stand which is completely successful by being entirely simple and up to date; consisting of a stone base and precast concrete top with corrugated iron used for shuttering, another example of the functional tradition in the 1950's. It is a model to anyone who builds in the country—and perhaps most of all to architects, so many of whom might over-design an object like this.



3

BOOKS

A NOVEL ANSWER

TRIUMPH OF PEACE: A STUDY OF THE WHITEHALL BANQUETING HOUSE. *By Per Palme. Thames and Hudson.* 70*s.*

Twenty years ago English architecture was, historically speaking, still in its antiquarian cradle: since the war it has been through the school of art-historical scholarship, and now it has graduated into the academic world of theses and post-graduate research. Mr. Palme's book was prepared as a thesis for a degree at Uppsala University, but it was written in London and it has now been published in an English edition. It represents what for this country is to some extent a new approach to architectural history. Hitherto the questions—other than purely factual ones—asked by writers on English architecture have been concerned chiefly with the history and analysis of style. Mr. Palme has gone one further. Guided by his supervisor, Professor Paulsson, he has attempted to define 'the historical situation in which, and for which, the building came into existence,' and 'to reconstruct its functional and evaluative context in its own age.'

This is a method which has, it is true, been applied more than once to English ecclesiastical architecture, notably by Dr. Addleshaw and Mr. Etchells. But in relation to Inigo Jones's Banqueting House it is something new, and the result is exciting. The building ceases to be merely the four walls behind the most famous façade in English classical architecture. It becomes one specifically designed to serve the elaborate diplomatic ceremonial of the time and, in particular, to glorify James I and his dynastic schemes. Mr. Palme convincingly associates the building of the hall with the preparations for the Spanish Match, and explains Rubens's paintings in terms of the political and religious ideas formulated by the king and his courtiers. He shows us how it was used as the setting not only of royal banquets, but also of masques, audiences, and the Office of Healing, better known as Touching for the King's Evil. Seen in this exalted context the Banqueting House attains an historical significance more than merely architectural: it becomes the Temple of the English Solomon, as charged with Stuart ideology as Westminster Abbey is with Plantagenet piety.

But Mr. Palme has not confined his researches to enlarging our understanding of the Banqueting House as a setting for court ceremonial. He has carefully examined its architectural lineage and indicated the sources which may have been in Inigo Jones's mind when he designed this 'inspired amalgam' of a traditional English hall and an ancient basilica as reconstructed by Palladio. In a particularly interesting chapter he demonstrates the existence of a ceremonial niche which was done away with after an existence of less than five years, and discloses the fact that the lower range of windows was either blocked up or covered by tapestries. The provision of two tiers of windows to light a single space has always been a puzzling feature of Jones's design, and if Mr. Palme does not altogether succeed in explaining the inconsistency, he has at least shown that it was one of which the seventeenth century was conscious as well as the twentieth. His own belief that originally some of the windows were open and others closed in such a way as to illuminate the ceremonial pauses in the reception of foreign ambassadors is ingenious, but seems to rest on insufficient evidence.

Apart from this, Mr. Palme proves his points with an exemplary citation of literary and documentary evidence, and the only general criticism which his book invites is indeed that it retains rather too obviously the form of an academic thesis, and that learning borne more lightly might still have given us the whole story in fewer and rather less formidable pages.

Howard Colvin

ALUMINIUM ART AND TECHNICS

ALUMINUM IN MODERN ARCHITECTURE. Vol. 1.—BUILDINGS. *By John Peter.* Vol. II.—ENGINEERING DESIGN AND DETAILS. *By Paul Weidlinger. Published in England by Chapman & Hall Ltd.* 80*s. and* 140*s.*

Aluminium and the plastics have, more than any other building material, a kind of glamour derived from a vaguely understood association with an advanced technology. Beyond this glamour, however, there is little factual information or, for that matter, understanding of the unique behaviours of these materials. Reynolds Aluminum, one of the three big American producers, recently commissioned these two volumes in order to remedy this deficiency as far as aluminium is concerned. The books are therefore aimed at architects interested in becoming familiar with one of the more important building materials of our period in order to explore to the utmost the available technological resources.

The first volume records certain architectural achievements in the use of aluminium during the last ten years and beautifully demonstrates the maturity, variety and acceptance which has been achieved in Europe and the Americas during this period. It has as an appendix some informal tape-recorded comments by twenty-six American architects. These are often revealing and occasionally amusing; Mies, for example, quoting Thomas Aquinas: 'Reason is the first principle of all human work' and adding 'I don't want to be interesting . . . I want to be good.'

The second volume—unfortunately, I understand, not available separately from the first—is a 'treatise on architectural engineering, directed to a specific building material: Aluminum' and is largely the work of Paul Weidlinger, who belongs to that small but fortunately increasing number of engineers able to combine brilliance with architectural insight. Quite apart from demonstrating the versatility of the various aluminium alloys and their multitudinous application in design from roofing to flagpoles through thresholds, curtain walls, insulation, ducting . . . it deals with the general problems of the material from its earliest stage as bauxite to its shop fabrication. A great many of the detailed descriptions are of very general interest and the catalogue of fastening devices, for example, many of which are borrowed from the aircraft industry, will surprise most architects.

The greatest drawback to the even wider application of aluminium is undoubtedly its price, which in turn is closely related to the cost of electric power. Only small quantities of aluminium are smelted in this country using the hydro-electric resources of the Highlands. Should the Volta River project go ahead, however, the existence of bauxite mines, a dam, a smelter and a port in Ghana, all in close relation to each other, may affect the price of aluminium within the sterling area. We may then come nearer to the economic arguments in favour of aluminium put forward in this publication.

The visual implications of the use of aluminium are related to this cost factor. More than in the case of steel, it is economic to spend a larger proportion of the total cost on labour and to design the more intricate spidery structures which use the material to its best advantage. Aluminium is also a generally weaker metal than steel, so that members will become correspondingly more bulky. Window mullions, for example, will have a greater cross-sectional area in aluminium than steel. Both these tendencies—spidery complexity and vigorous robustness—are, it would seem, very much in tune with current visual feelings.

Michael Brawne

NINETY YEARS ENGLISH BAROQUE

HISTORY OF ENGLISH ART 1625-1714. *By Margaret Whinney and Oliver Millar. Edited by T. S. R. Boase. Oxford University Press,* 1956. 50*s.*

The Courtauld Institute has made an immeasurable difference to the development of the history of art in this country. The editor of the Oxford History of English Art was its second director. The authors of this its eighth volume are the Reader in the History of Art at the Institute and a former student, one of the best the Institute can boast of. He is now Deputy Surveyor of the Queen's Pictures. The division of material between the two authors is transparent though unrevealed. Their collaboration is ideal, thanks to an identity of approach and a sufficient similarity of style. There is only one bad seam, when Dr. Whinney ends her chapter seven in 1675 and begins her chapter nine with the same year, but Mr. Millar interpolates in chapter eight the whole of major easel painting up to 1720 and beyond, a date Dr. Whinney reaches only in chapter thirteen. In another way, however, one author instead of two would have made a fundamental difference. He would no doubt have allotted space according to aesthetic value and historical significance. On both these scores architecture from Inigo Jones to Vanbrugh and Hawksmoor outstrips painting with, after Rubens and van Dyck, a Lely, a Kneller, a Verrio and even a Thornhill as its highlights. Moreover, in architecture every one of the masters was English, in painting none but

Thornhill.

Mr. Millar knows his subject profoundly, he describes superbly well and he never overestimates the artists he is dealing with. Yet readers will grudge him the space he has been given, and not only readers of THE ARCHITECTURAL REVIEW. Sculpture, for instance, might have had a little more space, not because its quality rises above that of painting, but because it has never before been put together in so consecutive and convincing a form as here by Dr. Whinney. And as for architecture, where, thanks to Mr. Summerson's volume of the *Pelican History of Art*, that cannot be said, the regret for constricted space yet remains. Mr. Summerson has about fifty per cent more. Dr. Whinney has done the right thing in concentrating on major figures and major buildings. This enables her to bring out more clearly than anyone so far the changing atmosphere of architecture in England from Inigo Jones to the Pratt-May-Hooke-Early-Wren moment and then to the Late-Wren-Hawksmoor-Vanbrugh phase with which she ends. It is here that she differs most interestingly from Mr. Summerson. He tends to attribute this heroic English Baroque to the younger men, Dr. Whinney stresses her faith in Wren's own capacity at the age of about seventy to develop this new style of colossal masses. As the editor of the future supplementary volumes of the Wren Society on the Bute drawings sold at Sotheby's in 1951, she will have an opportunity to discuss and, I think, prove her case. But if Mr. Millar can spend over a page on Wissing or on Mary Beale, should Dr. Whinney be forced to reduce All Saints, Northampton, to one line, to banish the eminently interesting mid-seventeenth century group of Thorpe-Thorney-Wisbech-Tyttenhanger (and incidentally Balls Park) into a footnote and to omit entirely the equally interesting contemporary work at Bolsover, Derby (County Hall), and Nottingham (Castle), and the later French group beginning with Montagu House, London, and Boughton and continuing with Petworth and Bramham Park? This group would have deserved an appearance in Dr. Whinney's chapters particularly because Mr. Summerson does not do it justice either, and because in addition Mr. Millar, curiously enough, does not even mention La Fosse's activity at Montagu House, although such Franco-Rubensian work cannot have failed to impress English patrons.

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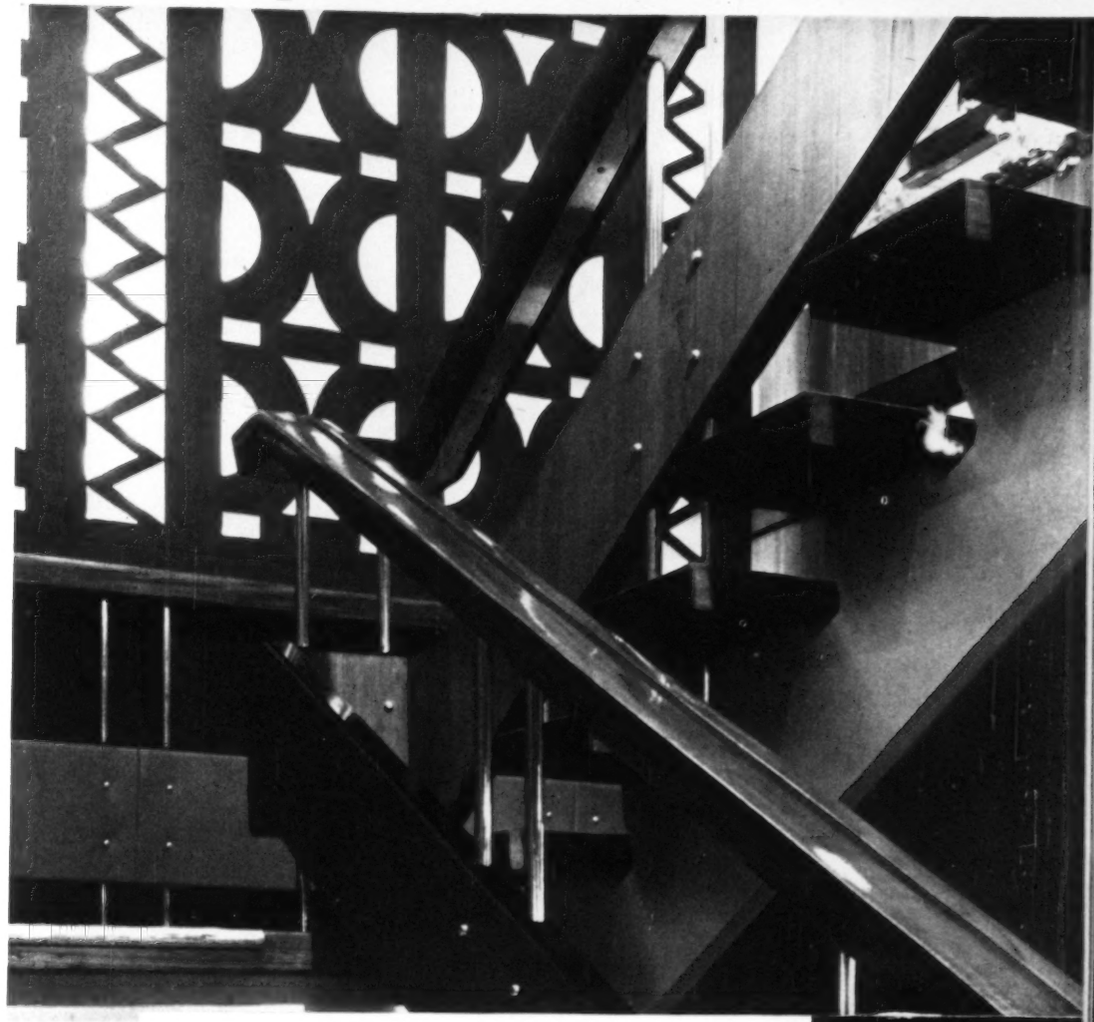

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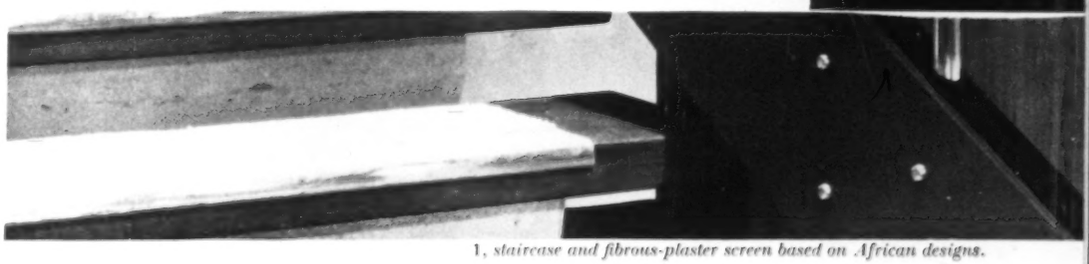

1, staircase and fibrous-plaster screen based on African designs.

1 INTERIORS

BOOKING HALLS, BOND STREET, W.1

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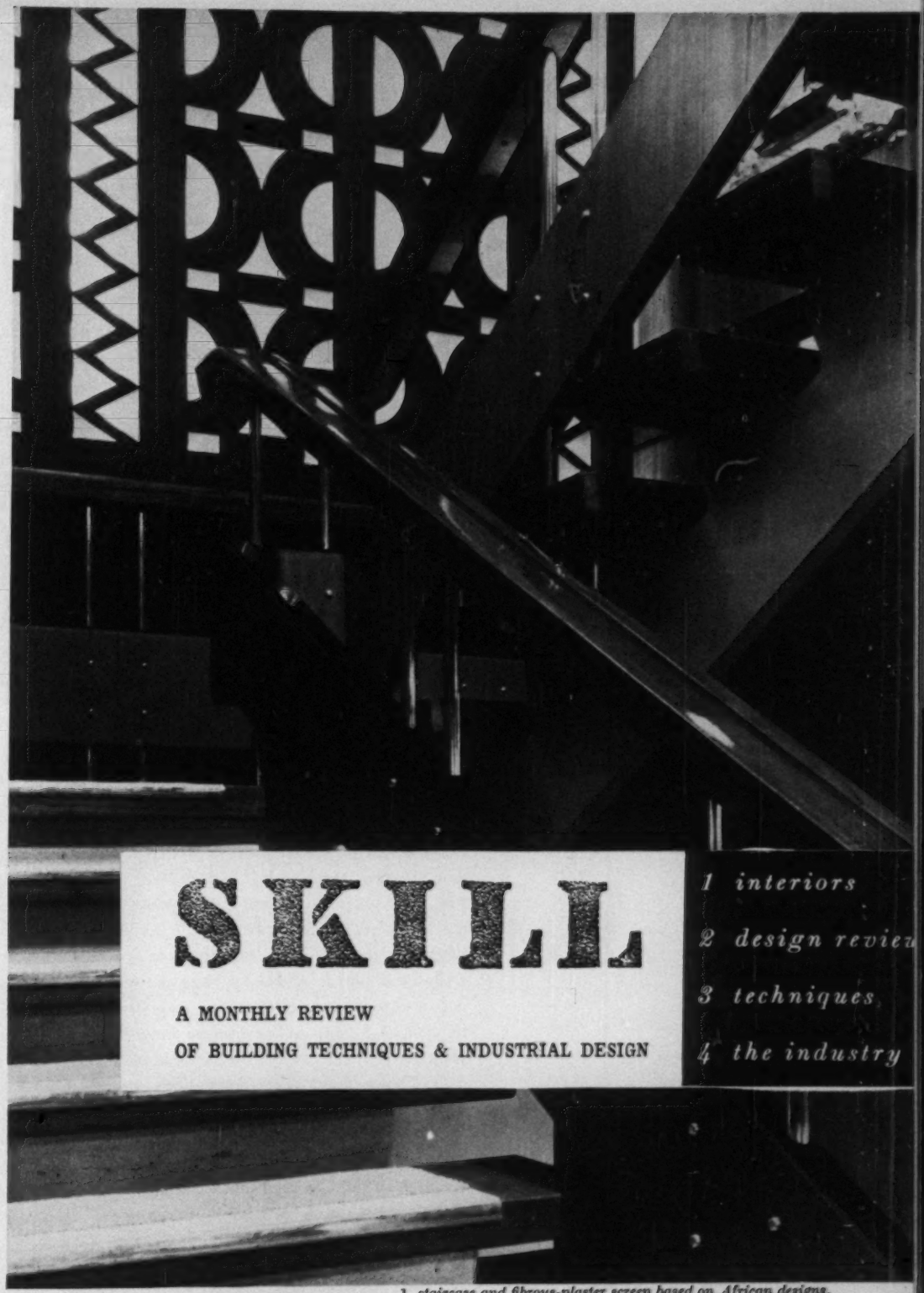

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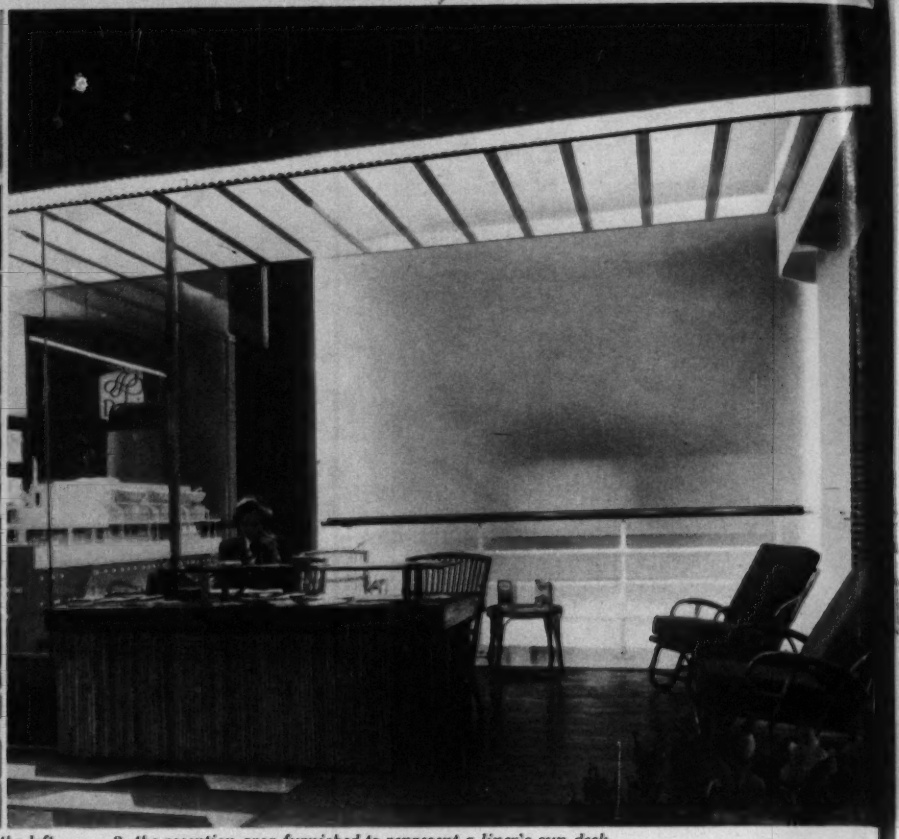
This passenger booking hall at 19-21, Old Bond Street, is for the Union Castle Line. The ground floor display windows are linked by a 24 ft. long centre window which has a teak slatted floor forming the base for changing displays which

2, *the main entrance with the sculptured panel by Henry Haig on the left.*



3, *the reception area furnished to represent a liner's sun deck.*

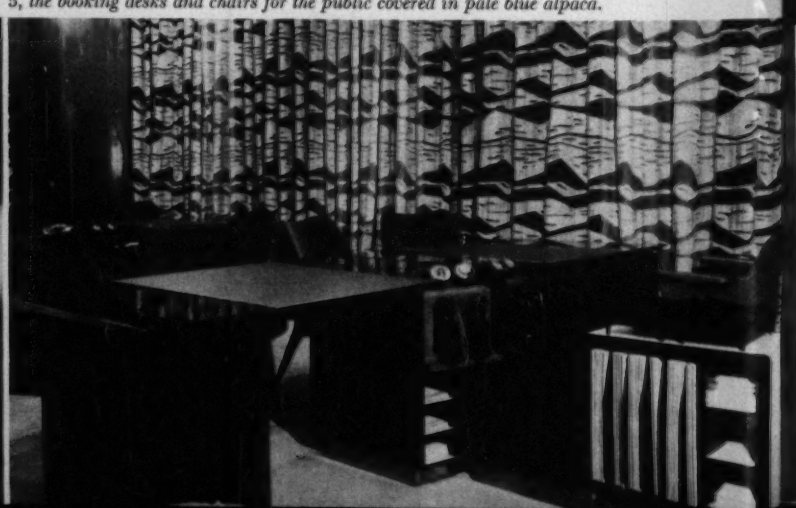
provide a partial screen to the main booking hall. The fascia piers and flanking walls are grey granite with stainless steel door furniture and window surrounds. Lettering is in a combination of perspex and stainless steel and is illuminated in rose. Two projecting signs, also in perspex and stainless steel, represent the house flags. On the left of the entrance door is a sculptured panel by Henry Haig carried out in vitreous enamelled copper plates set in cement fondu. A low canopy extends from above the doorway into the main hall.

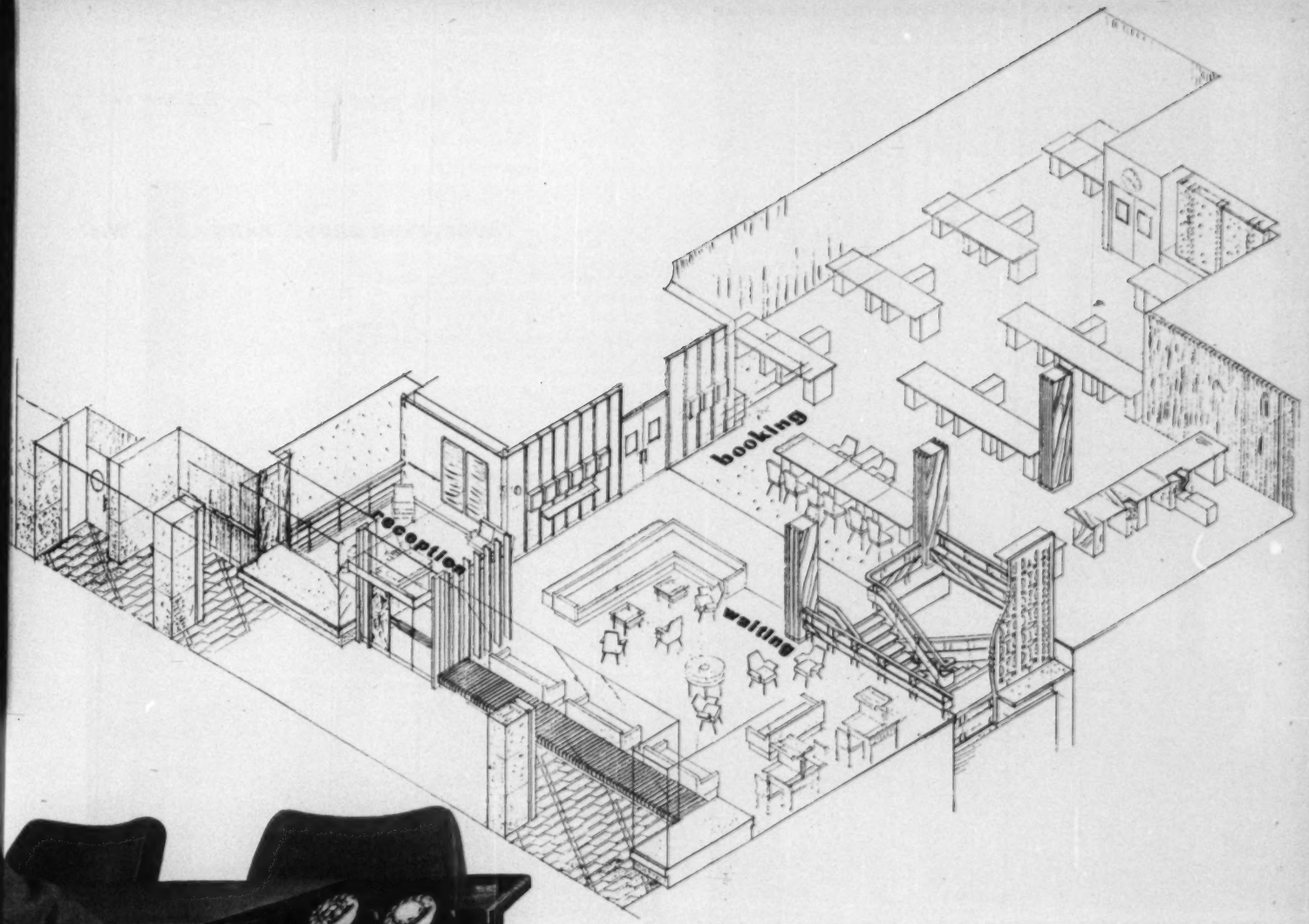
On both floors the decorations are similar—African teak panelling and teak slatting in white decorated plywood contrasting with paler areas of plaster; curtains which have a gold and black motif on a neutral background and beige carpeting. Ceilings which are treated with pale blue-grey acoustic tiles have openings for the ventilation system and recessed tungsten light fittings designed by the architects. Counters are dispensed with and specially designed booking desks of walnut and stainless steel with red leather inset tops are used instead. These incorporate hanging telephones to keep the top of the desk free and are designed to stand singly or to butt together.

The staircase has a reinforced concrete carriage with solid teak treads and handrail, baluster of brass, a balustrade of padded red leather, and a screen of fibrous plaster having a perforated pattern based on African designs. On the lower ground floor a decorative map covers the whole of one wall.

4, *the staircase from the lower ground floor.*

5, *the booking desks and chairs for the public covered in pale blue alpaca.*





6

above, isometric drawing of ground floor booking hall. 6, specially designed booking desk of walnut and stainless steel incorporating hanging telephones.

GROSVENOR HOUSE, PARK LANE, W.1

Architect: Gordon Jeeves

Interior Design Consultants: R. D. Russell & Partners

In the new wing which completes the hotel there are ninety-two bedrooms and two suites on seven floors while accommodation below is devoted to offices and general services for the hotel. Most of the bedrooms follow a standard pattern which is varied from floor to floor by different colour schemes and a choice of wood finishes—cherry, walnut or mahogany. Each bedroom has a built-in fitting of wall length which includes a wardrobe,

7

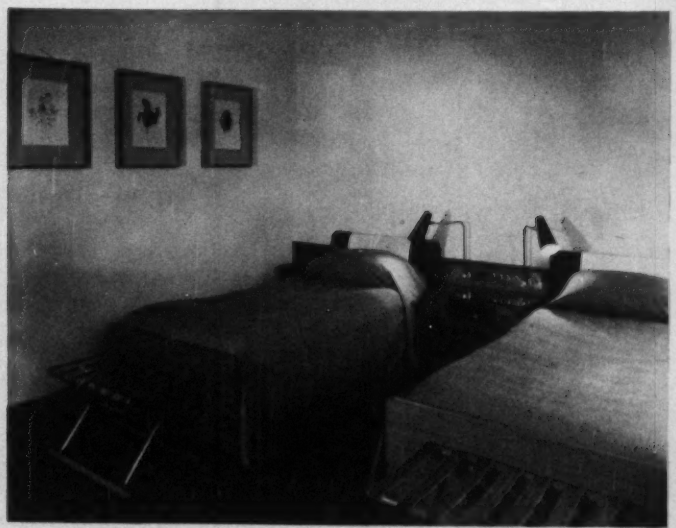
GROSVENOR HOUSE, PARK LANE, W.1

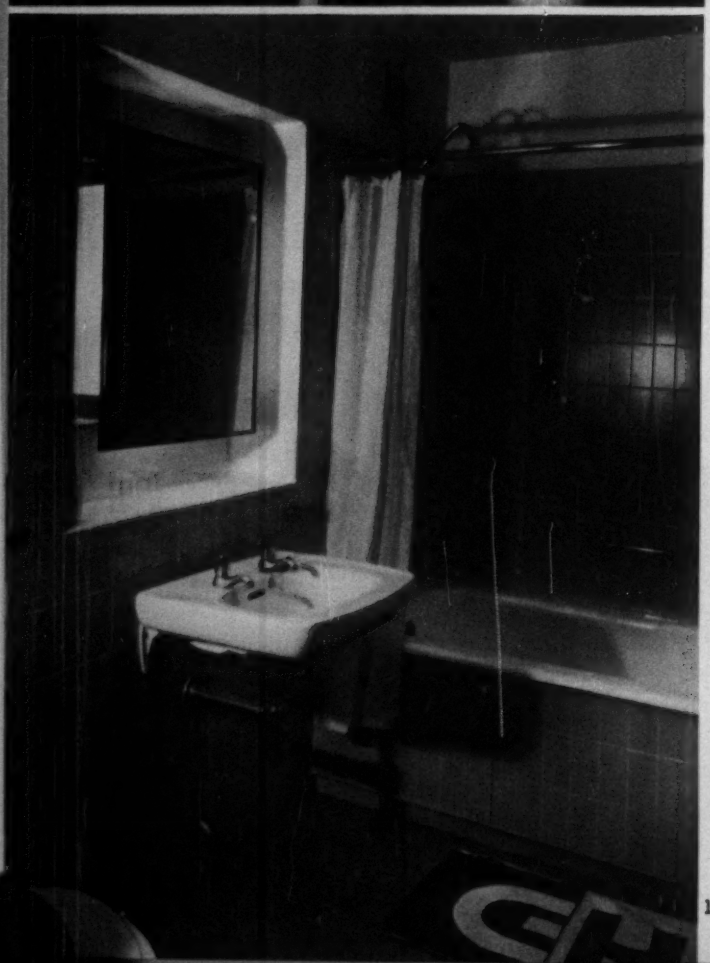
7, the dressing table with mirrors, placed to give an all-round view of the head.
8, sitting room in one of the suites.
9, a bedroom showing the bedside-table between the beds and luggage stools which can be folded away.
10, typical bathroom with coloured tiles on floor and walls, and mirror with indirect lighting above the wash-basin.

8

storage space and a dressing table. Heat is supplied by thermostatically controlled radiators concealed by cane-filled frames. The bathrooms are separated from the lobby by a hardwood screen with a glass panel at the top. Condensation is reduced by a ventilating system which changes the air in each bathroom every ten minutes.

9





10

ARCHITECTS: FITZROY ROBINSON & PARTNERS CONTRACTORS: HOLLAND & HANNEN and CUBITTS LIMITED

Erection of the new office building on the site of the former Holborn Restaurant

expedited by off-site fabrication and on-site assembly

The new building is expected to be ready for occupation by the end of the year. It has a steel frame with BISON precast prestressed concrete plank suspended floors.

Major economies resulted from reduced use of on-site shuttering, reduced floor fixing time, reduced overall floor depths, reduced man-hours and materials required. These were rendered possible by using BISON composite concrete plank floors (and hollow slabs for the suspended ground floor). BISON composite plank floors use prestressed concrete planks and *in situ* structural topping. The electric service conduits and other services are laid within the structural topping and this work is synchronised with floor fixing as a whole.

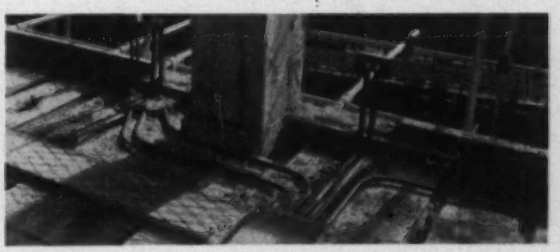
If ordinary *in situ* concrete floors had been used, extra time and material would have been necessary for the thicker screeding required to cover the electric services etc. which would have to be laid on top of the structural concrete, thus the floors would have been 2 in. to 3 in. deeper; the cost of the Natural Portland stone frontage and that of the brick clad for the rear elevation would have been correspondingly increased.

The savings actually made—because of thinner floors rendered practicable by using BISON composite plank construction—have been estimated as 520 sq. ft. of Portland stone for the stone-clad eight-storey frontage, and some 1,570 sq. ft. of brick cladding for the four storey rear elevation.

BISON floor fixing and concreting teams started work on January 1st 1957, shortly after commencement of steel frame erection. The sub-contract included some steelwork encasement and the bulk of the work was completed in less than two months—between completion of steel frame erection on May 22nd, and July 19th. This performance would have been impossible if ordinary *in situ* concrete floors had been used, because of the extra time required for formwork erection.

In eight weeks 14,937 yards super of BISON flooring were fixed —well over 500 sq. yd. per week. Between fixing the prestressed planks and pouring the structural topping, time was allowed for installation of electric and other service conduits. And, in the same period, no less than 1,533 steel beams and stanchions were encased in concrete; 22,591 cu. ft. of concrete was used, this being poured and completed at well over 700 cu. ft. per week.

Obviously it pays to use BISON floors!



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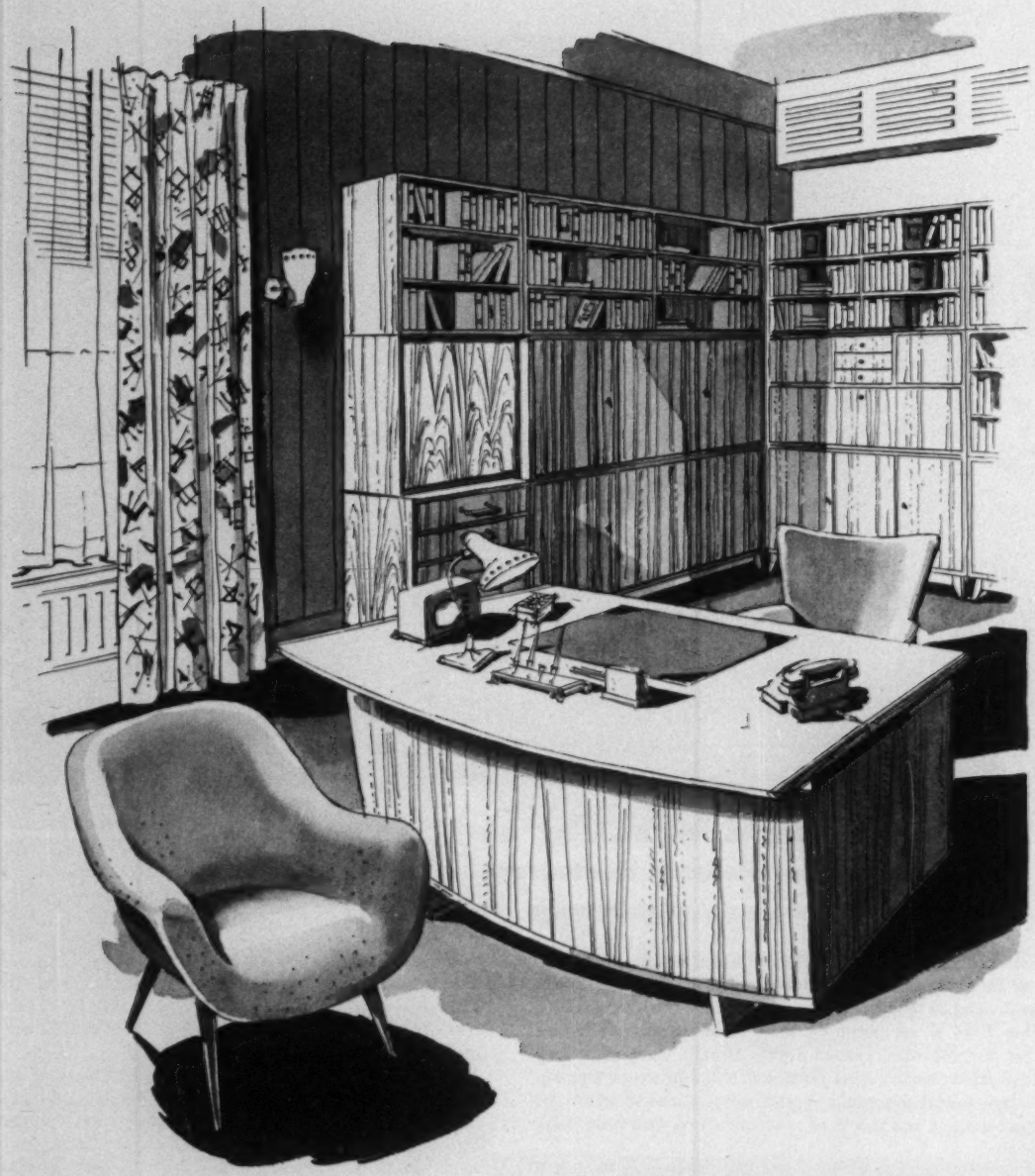

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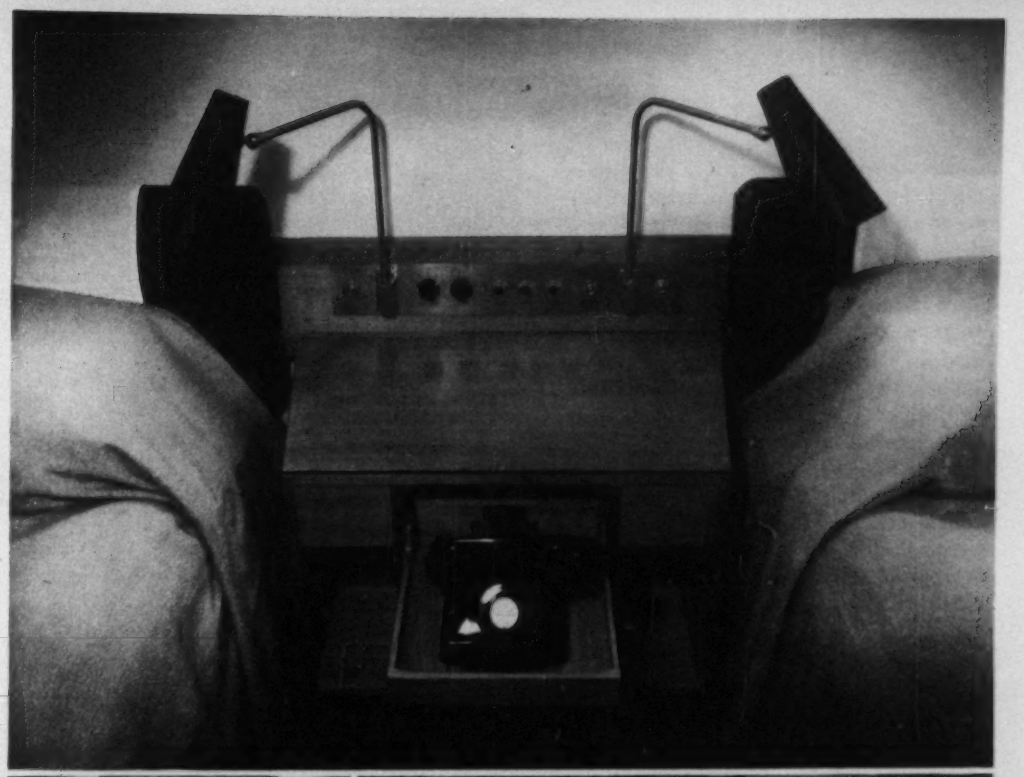


11, *the bedside-table fitted with radio, light and communication switches and a pull-out shelf for the telephone.*

12, *part of a built-in storage unit which incorporates a bar and amplifier.*

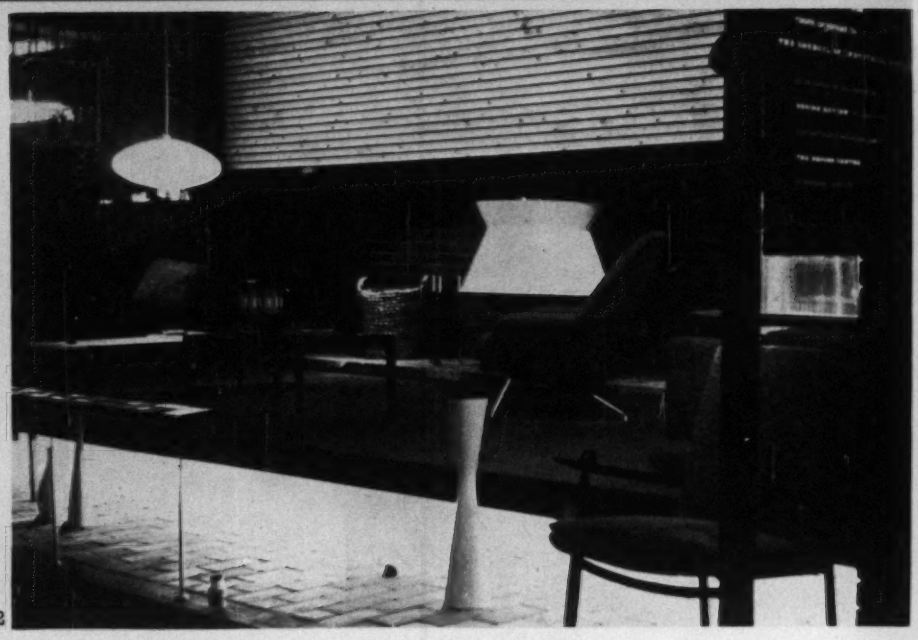
13, *a corner of a bedroom showing a radiator with cane cover and typical writing table.*

2 DESIGN REVIEW

Nothing could better demonstrate how success begets success, and improvement begets improvement, than the 1958 Furniture Exhibition at Earls Court. The improvement in over-all display, presentation and consumer-appeal which resulted from the activities of Leslie Julius's exhibition committee in 1957 have been extended, not only in the visual atmosphere of the show itself, 1, but also in the emergence of more enlightened design on more and more manufacturer's stands. The institutional displays around the central feature this year were more ambitious, and probably more consequential, in that they helped to give visitors a more broad-based standard of judgement, by exhibiting selected design from Britain, Italy, Finland and Sweden.

The Scandinavian exhibits were marked

as ever, by purity, simplicity, elegance—and an inevitable sameness arising from excess of natural birch and light-toned fabrics. The British exhibit, 2, selected by the CoID and designed by Challen and Floyd, while less sure of itself than the others, was much more enterprising than usual—if the exhibits themselves were familiar, albeit worthy, the device of showing them on floor-slabs suspended without visible means of support, clear of the ground with light flooding out from underneath, was extremely effective. Of the Italian section the less said the better, except that it could well be the death-blow to the Italianate craze in English middle-brow taste.



2

3 TECHNIQUES

STREET LIGHTING

by Peter Whitworth

Gordon Cullen's recent article (AR, December, 1957) was a plea for flexibility in street lighting. In this article Peter Whitworth reviews the best current British fittings and illustrates some of the results obtained on the Continent by using variable mounting heights.

It is inevitable that development should take place when an industry finds itself outdated by changing circumstances. The awakening of those concerned with lighting is not quite as recent as is often supposed; fifty years ago suggestions were made for lighting installations requiring light sources of some 500 watts and columns 28 ft. high. Similarly the much maligned concrete column made its debut as early as 1915, and was well established by the late 1930s. It must also be appreciated that, since its inception, public lighting to the lighting engineer, if not to the planner, has been concerned with user safety after dark. Since the first flare was used to draw attention to an obstacle or change of direction the ideal has been to perform this function even better. The introduction of the motor car and the increased use of the roads by night resulted in thought being given to roadway lighting, and by the thirties many installations had been erected using lamps of high output such as the mercury vapour and sodium gas discharge lamps. The use of these new light sources revealed the need for scientific study of the installation procedure and the effect of variables, including road surfaces, spacing and mounting heights, and in 1937 the Ministry of Transport set up a departmental committee to consider the whole problem. The work of this Committee is particularly significant, and many of its recommendations still concern us today in the Code of Practice for Street Lighting (see AR, December, 1957).

It is against this background of rapid technical development and the ready market for new products that we must consider the manufacturer. In common with many others in British industries, the manufacturers of street lighting equipment were shrewd enough to concoct easily saleable lamp standards, basing their character on the tired worn design clichés of the day, and relying on the susceptibilities of the authorities who were to buy them. The early attempts at design were often sadly misdirected and based largely on a hazy idea of classical proportion.

This state of affairs, arrested during the war years, became more apparent afterwards when the need to install new lighting schemes and replace dilapidated installations was common throughout the country. The Ministry of Transport, aware of the situation, invited the Royal Fine Art Commission to consider the designs of lighting equipment on its behalf, and financial aid to local authorities whereby one half of the cost of an installation lighting a trunk road was met by them, was made conditional on the design of the columns being acceptable to the RFAC. While this showed action on the right lines, it was not in itself enough, and in 1949 a meeting attended by some 40 representatives of municipal associations, government bodies and departments, and other interested parties, considered a joint memorandum by the RFAC and the Council of Industrial Design, outlining the difficulties and suggesting some remedies. It was generally agreed at the meeting that there was a lack of co-ordination between those responsible for the design of equipment, its selection and siting, but many local authority delegates were of the opinion that they were fully competent to deal with the matter locally. Time has shown this to be all too rarely true; however, several constructive suggestions came out of this meeting, including one that was unfortunately never acted upon. This was that a small central working committee be set up to consider the whole problem. It does not even now seem too late for this; it should be able to perform a very useful service.

At about the time of this meeting, it was realized that the CoID, with its experience in dealing with manufacturers' design problems, was in a good position to continue the work of the RFAC on behalf of the Ministry of Transport, and at the same time pursue a policy of improving the daytime appearance of street furniture. In 1952 the Council set up its Street Furniture Panel and took over this work. Since then it has maintained a list of approved lighting columns on behalf of the MoT, and has made this available to interested parties. The RFAC continue to advise local authorities on the siting and selection of columns and their relationship to specific problems. The CoID have negotiated with the manufacturers at the design stage, and this has led to a marked improvement in equipment. This would not have been possible without the co-operation of the makers, and often major financial sacrifices were made in changing plant to produce better designs. So successful has this co-operative effort been that today there are available designs of a high order and a wide range of equipment from which to choose. Many of these columns and lanterns compare very favourably with those offered anywhere, whether judged by technical or visual standards. This in itself, however, is not enough if the resulting improvement in lamp-posts and other items is offset by careless or unsympathetic siting, and it is essential to see that the installation is handled to the best advantage, rather than accept misuse with complacency.

One cannot seriously question whether or not motor roads should be lit. Adequate street lighting is essential to the safety of all road users, and there is ample evidence to prove that good lighting does materially reduce road risks, and sufficient to suggest also that accident reduction during hours of darkness can amount to as much as 30 per cent.

The basic principles of the Code of Practice, when applied, result in an installation giving safe night vision, and at the same time draw the user's attention to local hazards and the configuration of the roadway and junctions. However, the classification of roads is unrelated to surroundings and townscape, and while fast traffic routes such as the Cromwell Road extension look well with their new furniture, our villages and towns can be scarred by the intruder. Those who choose to live in the past, pretending that electricity is merely a nasty phenomenon which is better ignored, appear delighted with this failure—it is indeed a pity that nothing constructive is attempted by those people to draw attention to the prime cause of the unhappy situation, other than by assaulting an unfortunate by-product of an inadequate system.

The progress made cannot be denied, and from providing lighting on five miles of trunk roads in 1947–8, during the past year thé figure has risen to 120 miles! On the credit side it must be said that much of this work is good, and we should study these examples at least to the same extent as the failures.

One is tempted to sympathize with the poor lighting engineer and his staff who bear the brunt of the public criticism, and it is only right and proper that as a good servant to his master — the local authority — he should accept this responsibility, but many aspects of this problem are completely beyond his control, typical of the ramifications of local government. Finance and the spending of public money is governed by committees, many of whom interpret economy to mean 'always buy the cheapest.' So much attention is paid to the competitive tender system that often a price for an installation unsuited to the requirements is accepted, even when the tender for the ideal equipment is only fractionally higher. This system is inadvertently supported by the MoT grants based on the lowest tender.

[continued on page 217

TRADES UNION CONGRESS MEMORIAL BUILDING, LONDON

Architect: David du R. Aberdeen, B.A. (Arch.), F.R.I.B.A., A.M.T.P.I.

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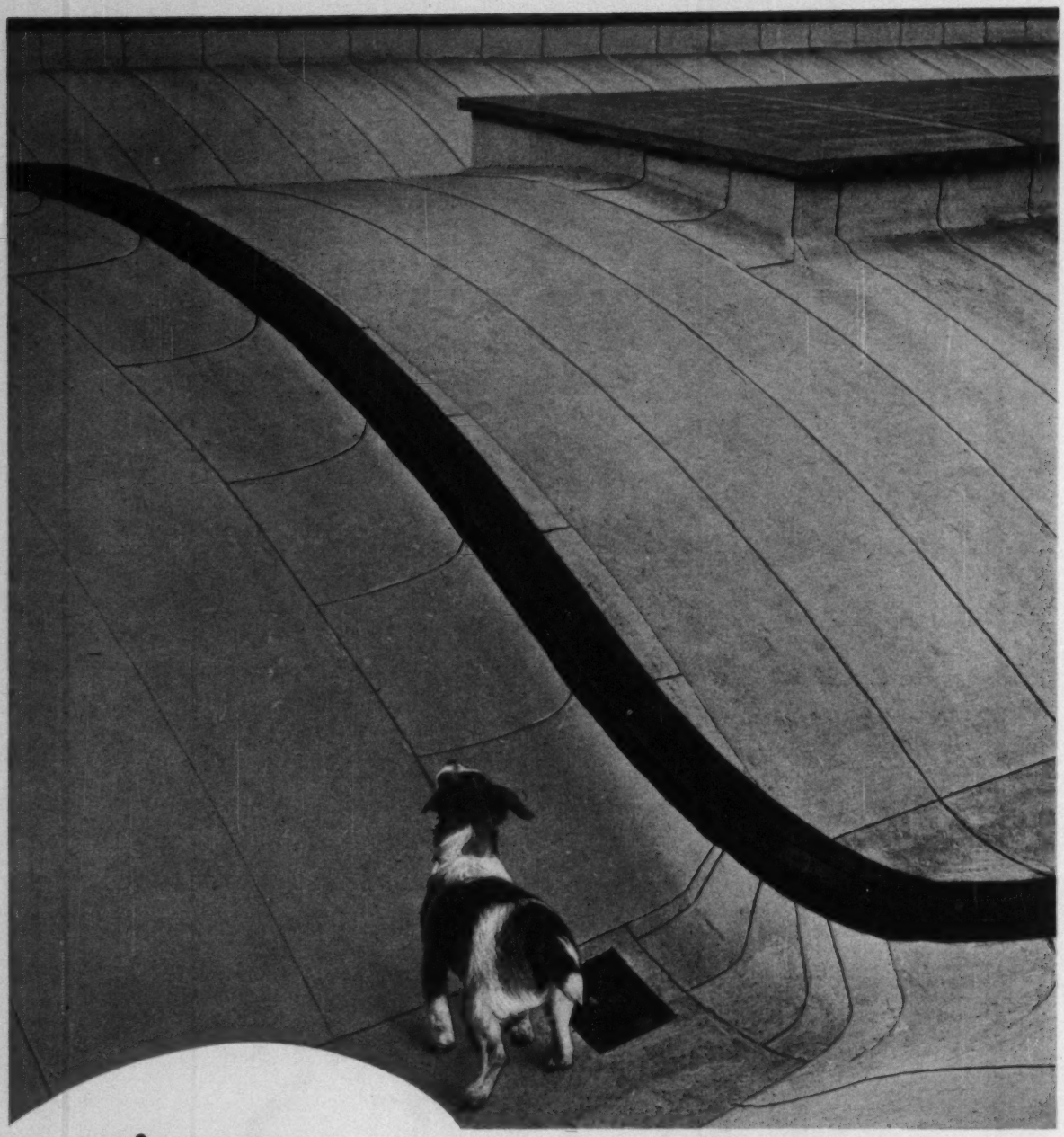

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continued from page 216]

This practice is leading to a price-cutting within the public lighting industry, and there is a danger that this could lead to a general lowering of standards. The industry has reason to be proud of their record to date, in reducing costs, when one considers that the annual cost per mile of street lighting in 1937 was some £400 and today it is unlikely to exceed £750 per mile. In the past ten years the cost of trunk road installations has risen from about £2,400 to £4,000 per mile, which compares very favourably with increases in other fields.

One cannot but feel a touch of nostalgia at the passing of the old cast-iron lamp-post and its ornate lantern, but it must be remembered that the shapes of our new street furniture cannot economically or practically follow old shapes. Like most other modern products, they are for the most part made by machines, often of new materials, and perform new functions—the modern lamp-post has no prototype in the past!

It is regrettable that it is still common practice to consider the design of the column and lantern separately instead of as one unit. Certainly the lantern by night must be technically suited to its job, but by day both column and lantern must be acceptable. It is often this disregard of daytime appearance and lack of relationship between the components of a lamp-post that ruin an otherwise satisfactory solution. It is nonsense to assume that appearance and performance in street furniture are not compatible.

The design of lanterns is related to the shape of light source, and their character is largely determined by the optical control employed. Several types of light sources are available (excluding gas) and these vary in size from a fluorescent tube some feet in length to the ordinary domestic tungsten lamp. 'White light' fluorescent tubes are used in sizes from 2 ft. to 5 ft. long; gas discharge lamps such as the green-blue mercury and orange sodium in wattages from 80–400 are in common use, as are tungsten-filament lamps over an equally wide range. Each of these lamps has its special uses to the lighting engineer. The fluorescent tube is popular because of its natural colour rendering, and it has the advantage of a comparatively low intensity at the source owing to this being spread over so large an area, making it suitable for a wide range of lighting applications. It does, however, need a sensitive designer to avoid these lanterns becoming luminous horse troughs. The effect of travelling in the tunnel of light they force into the night is unpleasant and can destroy any sense of surroundings. The limitations to the output of a single fluorescent tube make it necessary to use several together, and these are placed within the lantern, to suit the form of optical control adopted. Refraction, reflection and diffusion are used to direct the light where it is required. Many solutions incorporate all three.

Multiple light sources within the one fitting can be used very effectively to produce lanterns of variable output, enabling the maximum light to be emitted during peak traffic periods, and a lesser output is available for normal requirements.

Gas discharge and tungsten lamps are compact in overall size and light source, but require accurate optical control to distribute the light properly and avoid glare. Recent developments include multiple use of these within the lantern. The heat generated by these lamps presents yet another problem on the designer's brief, and it is current practice to

1, *Eindhoven. 13 metre high columns with two 400 watt colour-corrected mercury lanterns to each bracket, resulting in a very high level of illumination.*

2, *Eindhoven. Twin lamp version in foreground. Four lamp columns leading down to roundabout. The grand scale of this layout enables columns of this height to be used.*

3 *and* 4 *above. German examples of the 'whip' column and lantern. Much commended by tourists, but this rather loose curve cannot be the answer to all applications. Assumedly the light source is two or three 4 ft. 40 watt fluorescent tubes, considerably less than recommended by our Code of Practice.*

4

5, *a gracious, if tall, column, in a petrol station in Switzerland.*

6, *park lighting on Bornholm. The post-top lanterns contain three 20 watt fluorescent tubes. The column design shows signs of much the same problems as our designers encounter.*

7, *Dutch examples of continuous taper steel columns with some 30 ft. or more mounting heights. The curve of the bracket is elegant and the lantern mounting clearly defined.*

8, *this example represents a very logical solution to the original problem, which was to protect the light source, assumedly a bats-wing gas burner, from the elements, and at the same time provide air for combustion and ventilation.*

dissipate this by heat exchange with the surrounding air through the lantern casing rather than by air circulation and ventilation. The colour corrected mercury lamp, currently finding favour, is kinder to complexions than sodium—however, many motorists prefer sodium lighting when in the driver's seat, due to its penetration in fog and the sharper contrasts produced.

The function of the column or lamp-post is to hold the lantern in such a position that it can perform its job of lighting, and its appearance should be either inconspicuous or distinguished. Regulations necessitate columns being of various heights. (Group A—mounting height of light source 25 ft. with tolerances of +5 ft. and −1½ ft.; Group B—height 15 ft.: +1 ft. and −2 ft.) Provision for holding the lantern immediately on top of the shaft or at varying outreaches by means of brackets is required. Sometimes outreaches of up to 7 ft. 6 in. are needed, due to physical limitations on the column position. Structurally the column must be capable of withstanding the forces acting on it from the lever arm of the bracket and lantern, wind pressures, and in addition, a certain measure of vehicular impact that unfortunately occurs when columns are used in great quantities alongside motor roads. Another less obvious structural requirement is that the columns must be strong enough to be delivered to the site and erected. In the case of concrete, this is an important consideration, as the stresses incurred in erection are probably greater than those experienced in use.

A compartment in or on the column must be provided to connect the lantern with its energy (almost invariably electricity). This must make provision for terminating the main (usually located below ground in the road) in a sealing chamber, and provide space for connecting this supply to the control gear, fuses, time switches, and all the ancillary equipment required by the lantern. Recent developments, and the increasingly popular housing of chokes, transformers, etc. (when required) within the lantern, together with the possible miniaturization of all this gear suggest a reduction in the size of the base chamber, which so often governs the lower dimensions of the column. The tender system acts as a hindrance again to this development as engineers are unfortunately prone to specify compartments large enough to hold almost any gear that has ever been thought of, which may be selected by price, so that more often than not the result is an oversize compartment and column. Housing the control equipment below ground in a specially constructed chamber, even when possible, is expensive and its use is often prevented by shallow mains or other services below the road. From the practical aspect it seems more logical to service equipment at a convenient height than to go into a hole in the ground.

Much interest is aroused by the Continental columns, which always appear to be more acceptable than many of our own, probably because of the overriding advantage of unity, as the column and lantern are designed together. The Continental examples also tend to be higher, thus giving an appearance of elegance that is often missing in our own examples. In Britain higher mounting would allow columns to be wider spaced if used with a lantern of greater output, and still give the same illumination on the road. This could well be tried in many of our cities. The Continental standards we see illustrated do not

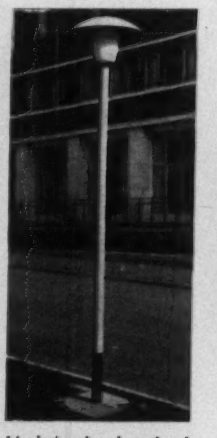
9, this lantern is truly the successor to 8 overleaf, tackling the problem with the integrity of the earlier example. The whole creation of this shape is related to its performance and light control. It was shown at the 1957 Triennale.

10 to 14, excellent lampposts rarely seen owing to the short-sighted tender policy. 10, column and lantern by Messrs. Falk, Stadelmann.

11, prestressed concrete column by Anglian Building Products Ltd., designed in collaboration with Kenneth Boyd.

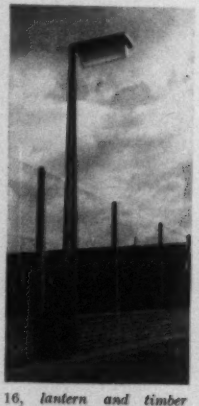
12, steel column by North Midlands Engineering Co., designed by David Mellor.

13, cast iron column by the same company and designer as 12.



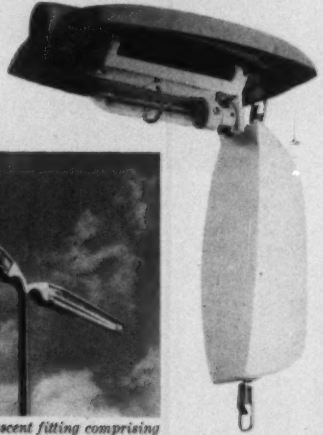
14, designed and produced by Troughton and Young (Lighting) Ltd.

15, Stewart and Lloyd's steel column, GEC lantern, brackets and canopies designed by architect's department, LCC. Not yet in production.



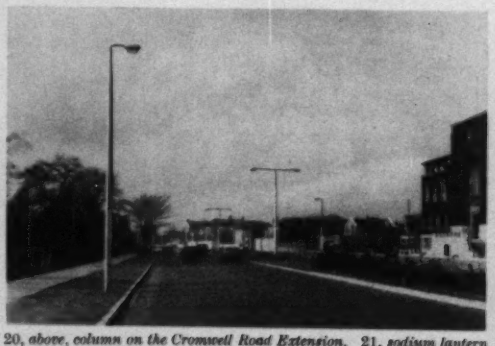
16, lantern and timber column by Thorn Electrical Industries both designed by Richard Stevens. Not yet in production.

17, twin-arm fluorescent fitting comprising two lanterns each containing three 5 ft. 80 watt tubes. Designed and produced by Messrs. Siemens.

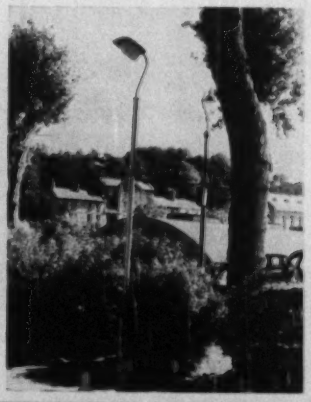


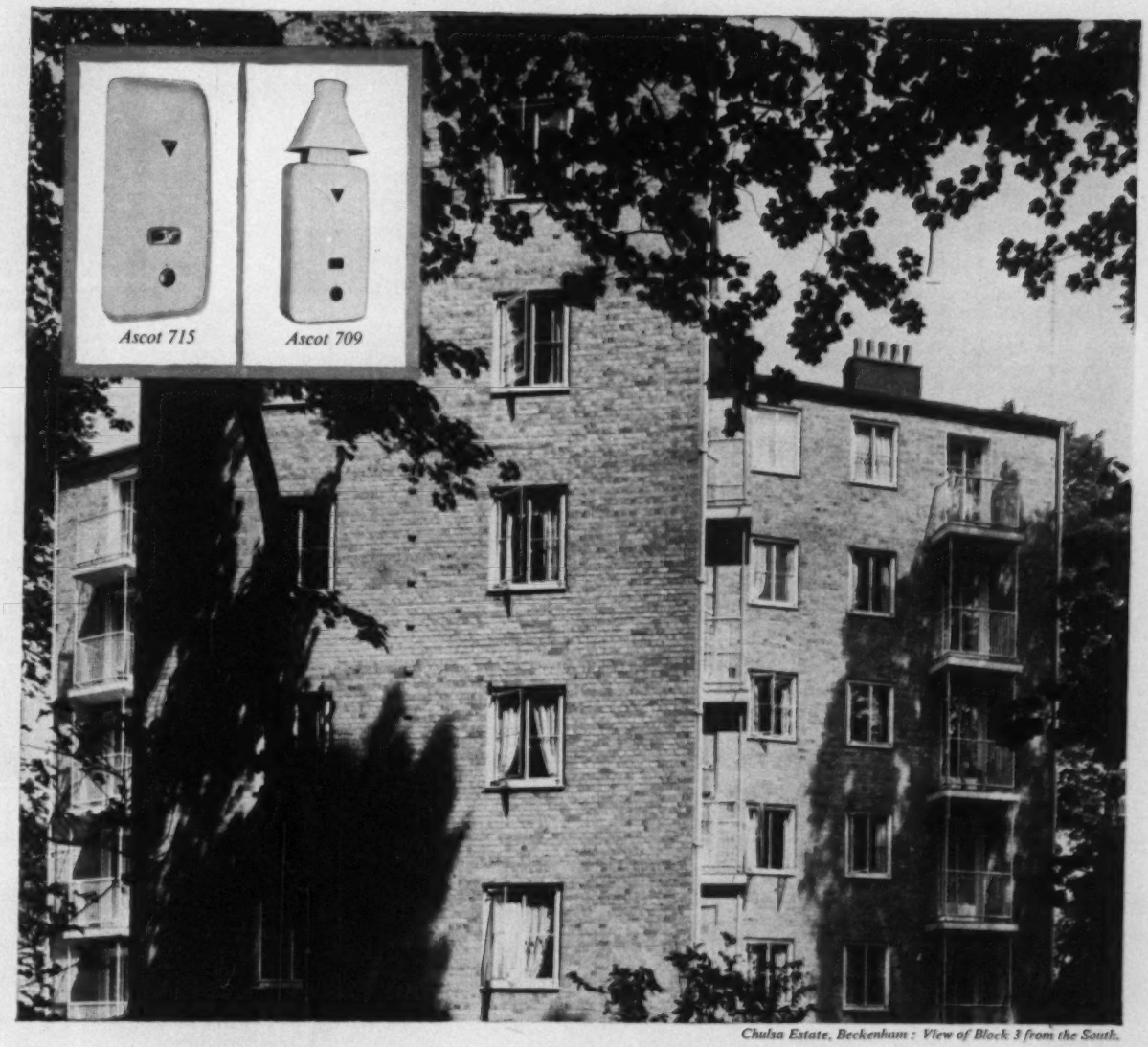
18, detail of the sodium lantern shown in 21.

19, concrete column with metal bracket. Designer, Jack Howe, produced by AEI.



20, above, column on the Cromwell Road Extension. 21, sodium lantern on aluminium alloy column; Thorn lantern designed by Richard Stevens, column by High Duty Alloys. 22, small fluorescent lantern on steel column. Same designers as 24.



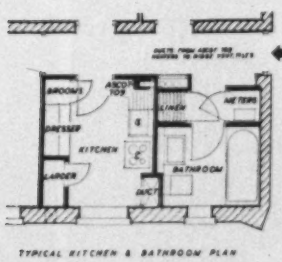


Chulsa Estate, Beckenham: View of Block 3 from the South.

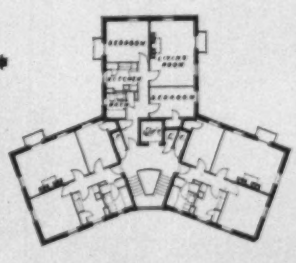
ASCOT IN NEW HOUSING (6)

Beckenham Borough Council's Chulsa Estate in Crystal Palace Park Road, Beckenham, comprises 172 flats and maisonettes in 13 blocks. Ascot multipoint instantaneous gas water heaters were chosen to give a comprehensive hot water service to each of these since the flexibility and compactness of Ascot installations enabled the architects to make the best possible use of the space available for the Estate.

In some blocks, Ascot 715 "balanced flue" multipoints were installed: the planning and load-bearing requirements of the "star blocks", one of which is depicted above, were, however, found to be better served by the installation of Ascot 709 multipoints, each with an asbestos flue carried up into the roof-space and terminating at the ridge with a vent tile.



TYPICAL KITCHEN & BATHROOM PLAN



TYPICAL FLOOR PLAN

RESPONSIBLE AUTHORITIES

J. Dove, A.M.I.C.E., M.I.Mun.E.
(Borough Engineer & Surveyor)

James and Bywaters,
5 Bloomsbury Street, W.C.1
(Architects)

S. G. and A. Agombar,
109 Elmers End Road, Beckenham
(General Contractors)

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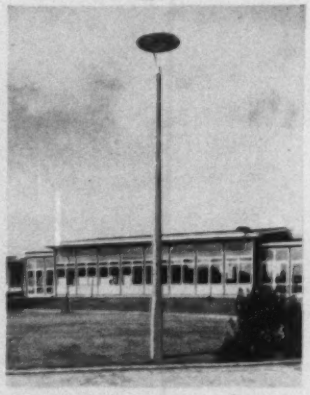
continued from page 218]

in general have the output of their British counterparts and on the whole one must assume that the installations of these are not as successful by night as our own. Exceptions, such as the lighting in Eindhoven, show an imaginative and fearless approach worthy of study as an example of civic lighting in the modern manner.

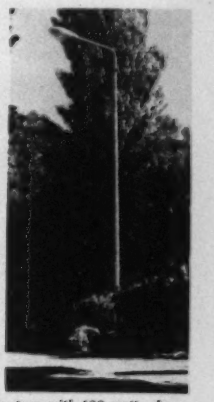
The concrete column increased its popularity immediately after the war, largely due to the steel shortage, but gained the permanent support of users due to its low initial cost and the complete lack of maintenance required. It is unrealistic to assume that no concrete column can be good looking, but it is true to say that the design of a concrete post is a most difficult task, and involves many restrictions not encountered in other materials. The shaft itself of simple reinforced or prestressed concrete has its proportion generally determined, not by aesthetics or mechanics, but by the dimensions of the base compartment plus the necessary thickness of concrete to surround this and maintain strength at a critical point. The alternative to this is to house the compartment in a swelling blistered on to the shaft. Both methods have been successfully employed, but the latter has not been very popular. The concrete bracket arm on the other hand presents an almost insoluble set of conditions. The best solution can only be when the proportion of the shaft, bracket and lantern present one unified structure; the need for various bracket arms and lanterns cannot produce more than a compromise. Undoubtedly an excellent visual and mechanical answer is the use of a metal bracket which can be easily varied to suit requirements, but regrettably this is not getting the support it deserves from the buyers on maintenance grounds. Manufacturers have now solved most of the problems encountered in producing a satisfactory 25 ft. standard, but with few exceptions the smaller 15 ft. column lags behind very largely due to the dictates of the base compartment.

The elegant slim steel lamp-post can, by virtue of the thinner walls round its gear compartment, emerge from the ground with a smaller shaft and this is an unquestionable asset, enabling a column to present the minimum visual intrusion on the street picture. Regular maintenance is required to protect the metal from corrosion and, given this, the columns can be used to great advantage—careful choice of colours can do much to help a column located in a tricky situation. At the moment it is to these columns one turns when an 'invisible' scheme is required, as their character is less dominant than that of concrete columns.

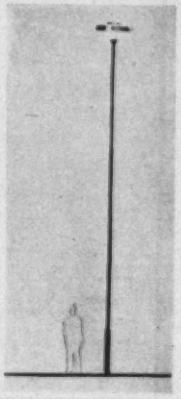
The tapered steel tube, so effective in Continental designs, has not yet been used here to the same advantage. We have a form of tapered tube in a 15 ft. column made from sheet in aluminium alloy, and both large and small octagonal columns produced by folding steel and welding, but it appears that the economic manufacture of a tapered tube in steel has not yet been achieved. In fairness it must be said that a lamp-post of this form is not the goal of many of our designers, but there is an awareness that a very slim tapered column with an elegant small lantern would meet many of the requirements encountered in preparing lighting schemes for our pleasant county towns.



23, post-top lantern on prestressed concrete column. The slim base section has been achieved by reduction of the control gear compartment—a bold venture by the manufacturer anticipating public demand. AEI lantern, Stanton Ironworks column.

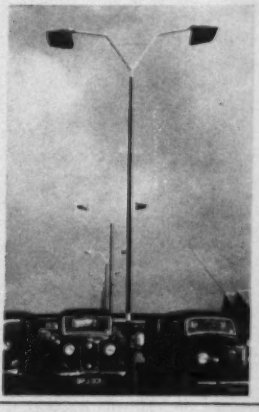


24, new lantern with 400 watt colour-corrected mercury lamp supported by steel column. A column by North Midlands Engineering Co., designer David Mellor; lantern by Thorn, designed by David Stevens.



25, left, an experimental installation with two 400 watt colour-corrected mercury lamps within the one lantern. The first serious British attempt at the design of the new high output lantern. Column by Stewart and Lloyd's, lantern by Thorn.

26, right, tungsten parking lights, lamps at Technicolor factory (see page 170). Designed by C. Wycliffe Noble, manufactured by Troughton and Young.



Rotherwick House
In the new Bond Street headquarters of the Union Castle Steamship Co. the dual reception desks were specially built by Waring & Gillow to the designs of the architect Michael Egan, F.R.I.B.A.
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4 THE INDUSTRY

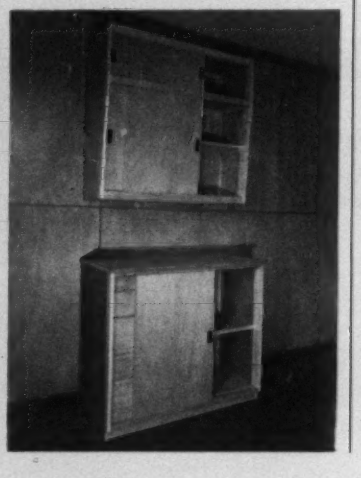
lightweight roofing

The photograph below shows a man pouring gypsum concrete on a 'Pyrodek' roof. This is a form of lightweight fire-resisting (2 hour) roof which is new in this country—but not in America, where it comes from—and which has been added to the list of roofs which Andersons will make. Bulb mild steel tees (of 2 in. by 2¼ in. or 2½ in.) are fixed at spans from 6 to 10 ft. on the supporting structure, formboards are laid between their flanges, mesh reinforcement is laid over tees and formboard, and gypsum concrete is pumped on to make a roof of about

3 in. thick. The gypsum sets in 15 minutes, after 1 hour it can be walked on, and after 24 hours the usual built-up roofing can be laid on it. The U value is 0.38; but this can be reduced to 0.16 by the use of fibreglass formboard. Weight will vary with the depth of tee used, but will be about 15 lb. per square foot (including three-layer waterproofing). The manufacturers state that the roof is most economic for areas of 1,000 square yards super or more.
D. Anderson & Son Ltd., Stetford, Manchester. (*Longford* 1113.)

kitchen fittings

Mass produced kitchen fittings are a class of product which has a bad reputation among architects, chiefly because they have been designed not according to commonsense, but to emulate cookers and refrigerators. To the architect, therefore, the chief selling point of Kingston's Scandinavian kitchen fittings is that they don't at all resemble the nasty slick white (or pink) image which will rise immediately to his mind. Being made of wood, they look like it; and being well constructed, they may be allowed to remain looking like it (i.e. they don't need painting). The doors are sliding to save space and are opened and shut by means of countersunk pulls, which could with advantage be made in a finish which offers less contrast to the surrounding wood. Nevertheless the finished product is refreshingly free from woman's magazine-ishness.

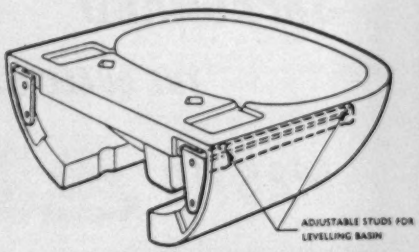


Kingston Architectural Craftsmen Ltd., Minster Works, Hull. (*Hull* 43121.)

conspectus of sanitary ware

The comprehensive catalogues of our major manufacturers of sanitary equipment drop with rather a thump on the architect's desk, if only because of the immense stock of goods which our complex society requires them to hold. As a class of literature they tend to be depressing, if only because the architect is not the only customer to be satisfied; and, indeed, to finger through some of them, you get the impression that he only accounts for a very small part of the market. This is not, however, the impression given by the loose-leaf catalogue which has been built-up for some years now by Shanks. Though there are, inevitably, some leaves which you will turn over quickly, the main impression gained is how great has been the task of linear purification carried out by this firm over the vast field of its products, how sensitive they have been to architects' advice, perhaps sometimes to architects' prejudices. It is a good catalogue, telling you what you want to know in a businesslike way (short of the price, which would hardly be practicable in a work of this kind).

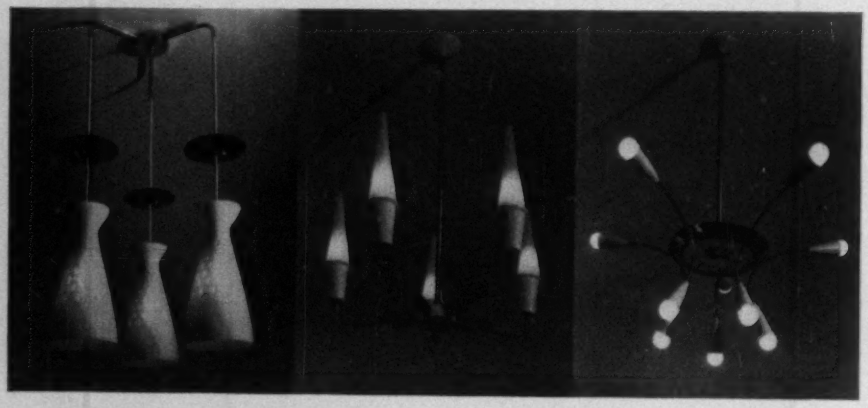
It is not possible to do justice here to the separate items (there are over 700 of them); but it is certainly worth pointing out one newcomer, the Marnock lavatory basin, a very neat vitreous china version which overcomes an age-old source of washbasin untidiness by incorporating the brackets inside the basin profile.
Shanks & Co. Ltd., 81 *New Bond Street, W.*1.



CONTRACTORS etc

Technicolor Laboratories, Harmondsworth, Middlesex. *Architects:* Gooday and Noble. *General contractors:* Janes (Builders) Ltd. *Consulting engineers:* R. T. James & Partners. *Sub-con-*

[continued on page 224



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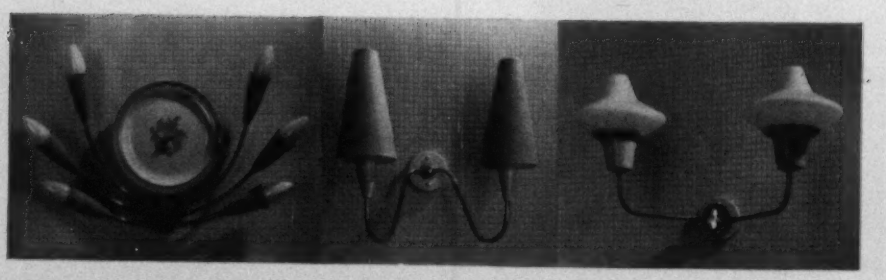

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continued from page 222]

tractors: Roofing: William Briggs & Sons. *Roof glazing:* W. H. Heywood & Co. *Windows:* Haywards Ltd.; James Couper & Co. *Flooring:* Bennett's Wood Block Flooring (Tungit) Ltd. *Heating and wiring:* Troughton & Young Ltd. *Sprinklers:* Automatic Sprinkler Co. *Bricks:* Uxbridge Flint Brick Co. *Steel (partitions):* Norwood Steel Equipment Ltd. *Tiles:* Semtex Ltd. *Door furniture:* Alfred G. Roberts & Co. *Roller shutters:* Chatwood-Milner Ltd. Bedwell Community Centre, Stevenage. *Architect:* Stevenage Development Corporation. *General contractors:* Thos. Raban & Son. *Roofs and ceilings:* Brock Roofing Ltd. *Floor finishes:* Hollis Bros. Ltd. *Windows:* Crittall Manufacturing Co. *Structural frame:* Hotchkiss Engineering Co.

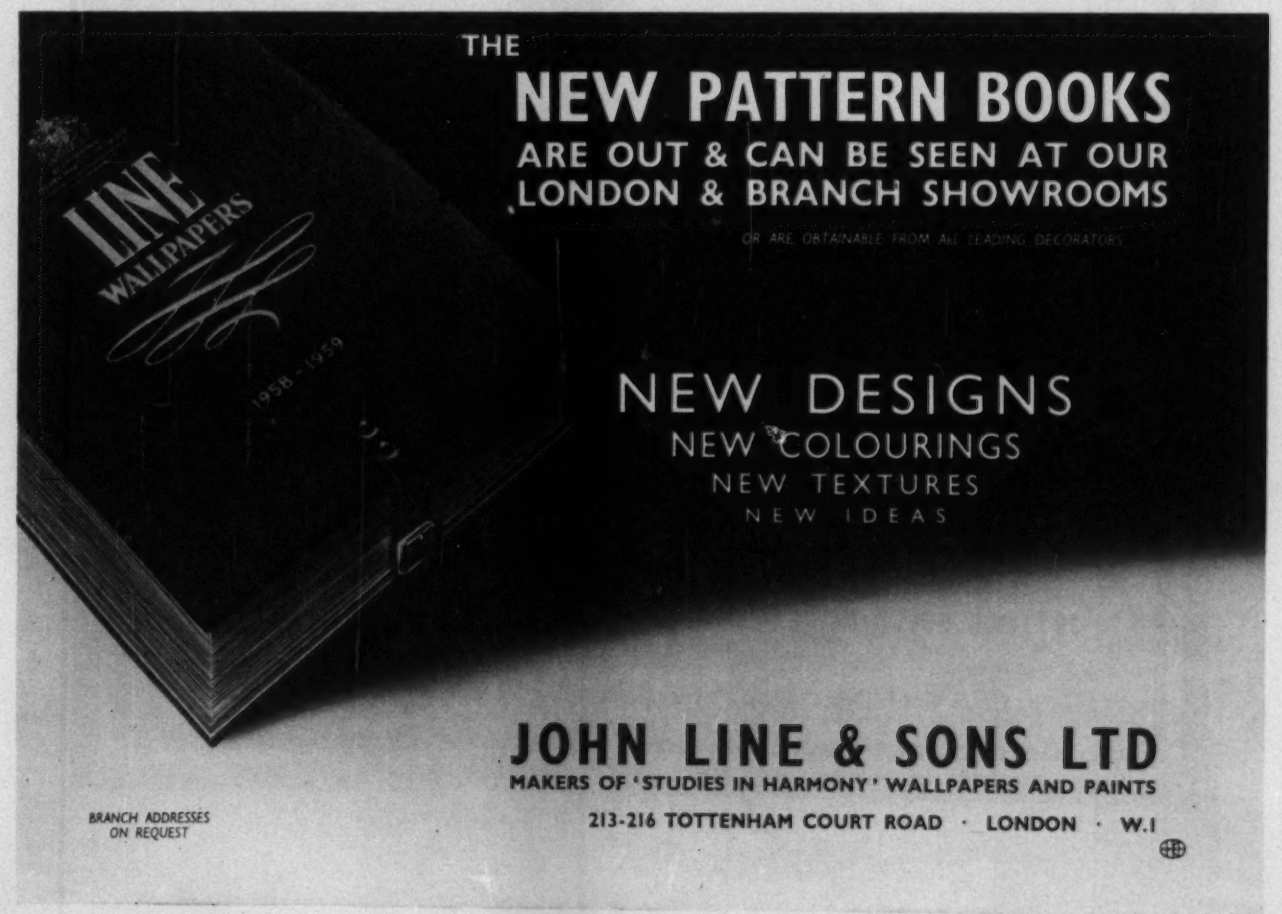
House at West Wittering *Architect:* Michael Lyell. *Contractors:* W. H. C. Rooke. *Sub-contractors: Cedar shingles:* W. H. Colt (London) Ltd. *Felt roofing:* The Ruberoid Co. *Accoflex flooring:* The Armstrong Cork Co. *Electrical installation:* Collins & Day. *Kitchen fitments:* Ezee Kitchens Ltd. *Sanitary fitting and ironmongery:* W. N. Froy & Sons. *Purpose-made metal windows:* The Crittall Mfrg. Co. *Sunblinds and venetian blinds:* London Blinds Ltd.

Rothes Colliery, Fife. *Architect:* Egon Riss. *Civil engineering consultants:* B.R.C., Stafford. *Building contractors: Towers, car hall, sub-station and fan house:* Holland & Hannen & Cubitts (Scotland) Ltd. *Lamp cabin offices, workshops, gas turbine and boiler house:* Mowlem (Scotland) Ltd. *Drainage:* Geo. Wimpey & Co. *Structural steelwork:* Redpath Brown & Co.; Markham & Co. *Patent glazing:* W. H. Heywood & Co. *Metal windows:* Henry Hope & Sons.; Williams & Williams. *Joiner:* Alex B. Cant. *Painter:* A. T. Rolland Ltd. *Linoleum:* Numire. *Plaster work:* David Thomson. *Terazzo tiling:* Toffolo Jackson & Co. *Electrical:* Wm. Allan Smith & Co. *Roads and site works:* James White (Contractors) Ltd. *Roofing:* Ruberoid Co. ; McCartney Ltd. *Glazing:* James Thow Ltd. *Roller shutter doors:* Roller Shutters Ltd. *Passenger and goods lift:* Etchell Congdon & Muir. *Paint:* Craig & Rose.; Matthew Maclay & Manson Ltd. *Moler brick lining to chimney:* Industrial Products Refractories Ltd. *Sanitary fittings:* Shanks & Co. *Street lighting:* Jas. Scott & Co. (Elect. Engs.) Ltd. *Rubber floors:* The North British Rubber Co. *Fire-resisting doors:* Durasteel Ltd. *Heating:* Taylor & Fraser Ltd. *Boiler makers:* Penman & Co. *Gas turbine:* John Brown & Co. (Clydebank) Ltd. *Shutter gates:* The Bolton Gate Co.

Offices in London Wall, E.C.2. *Architects:* Campbell-Jones & Sons. *General contractors:* Ford & Walton Ltd. *Structural engineers:* E. J. Cook & Co. *Heating and ventilating:* W. G. Cannon & Sons. *Lifts:* Aldous & Campbell Ltd. *Sanitary fittings:* Thos. Crapper & Co. *Portland stone:* Samuel Bysouth & Sons. *Marble:* J. Whitehead & Sons. *Metalwork and ironmongery:* H. & C. Davis & Co. *Metal windows:* The Crittall Manufacturing Co. *Fibrous plaster:* James Walker (Architectural Decorations) Ltd. *Joinery:* Rippers Ltd. *Lettering:* The Lettering Centre. *Hose reels, dry risers:* Mather & Platt Ltd. *Electric light fittings:* Thorn Electrical Co.; E. Heffer & Co.; Merchant Adventurers of London Ltd. *Suspended ceilings:* Anderson Construction Co. *Pavement lights:* John Healey (London) Ltd. *Glass roof lenses:* J. A. King & Co. *Fireproof shutters and doors:* Dreadnought Fireproof Doors (1930) Ltd. *Lightning conductors:* J. W. Gray & Sons. *Linoleum:* The Lino Tile Co. *Glazing:* Faulkner Greene & Co.

Laboratories at Sherborne School for Girls. *Architects:* Architects' Co-Partnership. *General contractors:* Gilbert-Ash Ltd. *Sub-contractors: Ceilings:* Tentest Fibre Board Co. *Heating:* Weatherfoil Heating Systems Ltd. *Window and external door units:* East & Son Ltd. *Ironmongery and sanitary fittings:* William Dibben & Sons. *Furniture:* Avant Galleries Ltd. *Blinds:* Dean's Blinds (Putney) Ltd. *Fire fighting equipment:* The Pyrene Co. *Laboratory fittings:* Spencer Joinery Ltd.

Factory and Offices, Camberley, Surrey. *Architect:* John Bickerdike. *General contractor:* J. M. Jones & Sons (Builders) Ltd. *Sub-contractors: Reinforced concrete (precast steps):* Conallcrete Ltd. *Precast coping:* Qualcrete Ltd. *Floors and roof:* Geo. Greenwood & Sons. *Bricks:* Eastwoods Sales Ltd. *Fletton:* The London Brick Co. *Special roofings and felt:* Wm. Briggs & Sons. *Partitions:* Bellrock Gypsum Industries Ltd. *Structural steel:* Conder Engineering Co. *Tarmacadam:* General Asphalte Co. *Patent flooring:* Marley Tile Co. *Granolithic paving:* F. Bradford & Co. *Central heating:* Weatherfoil Heating Systems Ltd. *Boilers:* Spanner Boilers Ltd. *Stairtreads:* Korkoid Decorative Floors. *Metal staircases:* R. Smith (Horley) Ltd. *Casements and patent glazing:* Senlac Metal Casements Ltd. *Sanitary fittings:* Adamsez Ltd. *Standard flush doors:* Gliksten Doors Ltd. *Handrails:* F. J. Lewis Ltd. *Signs:* The Lettering Centre. *Paint:* Walpamur Co. *Chlorinated rubber paint:* Tretol Ltd. *Door furniture:* Alfred G. Roberts Ltd.

Booking Halls, Bond Street, W.1. *Architect:* Michael H. Egan. *Shopfront: Shopfitters:* Fredk. Sage & Co. *Sub-contractors: Terrazzo flooring:* Marriott & Price Ltd. *Electric light fittings:* Fluorel Ltd. *Interior: General contractors, furnishings, curtaining, etc.:* Ian Henderson Ltd. *Purpose made furniture (cash desk, writing tables, etc.):* Waring & Gillow Ltd. *Acoustic ceiling:* May Acoustics Ltd. *Fibrous plaster screens, coves, spray decorations, etc.:* David Esdaile & Co. *Spotlights for special effects:* Strand Electric Co. *Ship's handrail:* Harland & Wolff Ltd. *Curtains:* Edinburgh Weavers.

Grosvenor House, Park Lane, W.1. *Architect:* Gordon Jeeves. *Interior design consultants:* R. D. Russell & Partners. *Sub-contractors: Electrical installation:* Troughton & Young (Lighting) Ltd. *False ceilings:* Campbell Denis Ltd. *Fitted furniture:* Gordon Russell Ltd. *Heating and ventilation:* Z. D. Berry & Sons. *Carpets:* Carpet Manufacturing Co. *False ceilings: Expanded metal: Metal channels:* Lathing Supplies; Expanded Metal Co.; Metal Sections Ltd. *Joinery:* Builders' Supply Co. *Light fittings:* Merchant Adventurers Ltd.; Troughton & Young (Lighting) Ltd.; Anthony Juer Lighting Ltd.; Finmar Ltd. *Paint:* Imperial Chemical Industries Ltd. *Sanitary fittings:* Shanks & Co.. *Terrazzo shelves:* Art Pavements & Decorations Ltd. *Wallpapers:* Cole & Son (Wallpapers); John Line & Sons.